

# **CHAPTER 2.0**

## **PROPOSED ACTION AND ALTERNATIVES**

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### 2.1 PROPOSED ACTION AND ALTERNATIVES

#### 2.1.1 INTRODUCTION

This chapter of the Environmental Impact Report (EIR)/Environmental Assessment (EA) fully describes: the Centinela Solar Energy Project (proposed project or Proposed Action) proposed by Centinela Solar Energy, LLC (CSE or the “Applicant”) to build a 275-megawatt (MW) solar photovoltaic energy project consisting of the CSE Facility Gen-tie Line; Alternative 1 - Double Circuit Gen-tie Line Structures; Alternative 2 - Reduced CSE Facility Site; and Alternative 3 - Use Existing Electric Line Towers and 230-kV Line Looping.

Each of the action alternatives would include a Right-of-Way (ROW) approval by the United States Department of the Interior Bureau of Land Management (BLM). This chapter also describes the No Action/No Project Alternative, alternatives development; and alternatives considered but eliminated from detailed analysis.

Alternatives considered in the EIR/EA are based on issues identified by the BLM as well as comments received during the public scoping process. The BLM is required to consider in detail a range of alternatives that are considered “reasonable,” usually defined as alternatives that are realistic (not speculative), technologically and economically feasible, and that respond to the purpose of and need for the project. This requirement is also identified as part of the California Environmental Quality Act (CEQA) Guidelines (Section 15126.6).

This document provides information to the authorized officer to make the following decisions:

- Should a ROW grant be issued? If so, should it be as requested or modified?

The Applicant provided technical information about the Proposed Action in this chapter. Information referring to land disturbance, equipment, schedule, mileage, and workforce are based on the most up-to-date engineering available from the Applicant and generally represent conservative estimates in analysis of impacts (e.g. a five percent contingency is added to disturbance acreage to be conservative as shown in **Table 2.0-3**, below). The project figures may change based on final engineering and permit requirements for the project components. The Applicant’s information appeared primarily in the Draft Plan of Development (POD) for the Centinela Solar Energy Project submitted to the BLM on January 26, 2011. The Applicant provided more detailed information from that time through August, 2011.

#### 2.1.2 PROJECT BACKGROUND

The Applicant is proposing to build, operate, and maintain solar power generation facilities on approximately 2,067 acres of private land in southern Imperial County. The proposed project consists of two primary components: (i) solar generation equipment and associated facilities on privately owned land (the “CSE Facility”) and (ii) 230-kilovolt (kV) aboveground, electric transmission line(s) and associated facilities (the “Gen-tie Line”) that will connect the generation facilities with the Imperial Valley Substation. The CSE Facility and Gen-tie Line are referred to collectively as the “project” or Proposed Action. The area encompassing the CSE Facility and the Gen-tie Line is referred to as the “CSE project Area.” CSE intends to begin construction on the project in winter 2011.

On June 29, 2010, the Applicant submitted an application for a Conditional Use Permit (CUP) to the Imperial County Department of Planning and Development Services (ICPDS). The CUP application was submitted to allow construction and operation of a solar photovoltaic electric generation facility and associated electric line in western Imperial County near the Imperial Valley Substation. On September

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17, 2010, the Applicant submitted an amendment of the June 29 application to incorporate two additional parcels of land. In November 2010, the Applicant informed the ICPDS of the acquisition of additional parcels and the resulting changes to the proposed project. The Notice of Preparation (NOP) for the Centinela Solar Energy Draft Environmental Impact Report (SCH. No. 210111056) issued by the ICPDS on November 12, 2010 incorporated the project description, as amended (CSE, 2011a).

On January 7, 2011, the Applicant submitted an Amended and Revised CUP Application to the ICPDS. This document consolidated the entire application and subsequent changes to the project as well as responded to requests from the ICPDS for additional information needed to prepare the Draft Environmental Impact Report (DEIR) (CSE, 2011a).

On February 24, 2011, the Applicant submitted a Variance Application to the ICPDS. The Variance Application addressed Gen-tie Line structures that exceed the zoning-imposed height limitations for the section of the Gen-tie Line on private land. The proposed maximum height of the Gen-tie Line structures on private land is 130 feet.

On April 29, 2010, the Applicant submitted an Application for Transportation and Utility Systems and Facilities on Federal Lands (Standard Form 299, or "SF-299") to the BLM. The SF-299 application requested a linear ROW to construct and operate the Gen-tie Line and associated facilities on land managed by the BLM. These lands are subject to federal oversight and management by the BLM for public benefit and use on a variety of levels ranging from preservation and recreation to utilities and infrastructure corridors.

### 2.1.3 ALTERNATIVES DEVELOPMENT AND SCREENING

This section outlines the process used by the BLM to develop the alternatives. Alternatives considered by the Applicant and the BLM were evaluated using the following criteria:

- Does the alternative fulfill the purposes, needs, and objectives?
- Does the alternative reduce effects to human/environmental resources?
- Is the alternative feasible to construct, operate, maintain, and decommission?

Alternatives that met all of the criteria listed above were carried forward for analysis. Those that did not meet the criteria were eliminated from further analysis and are described in subsection 2.2.10, along with the reasons for elimination.

### 2.1.4 OVERVIEW OF ALTERNATIVES CONSIDERED IN DETAIL

The three full action alternatives and the Proposed Action and one No Project/No Action Alternative, which are described in detail in subsections 2.2 through 2.3, are as follows:

- Proposed Action
- Alternative 1 – Double Circuit Gen-tie Line Structures
- Alternative 2 – Reduced CSE Facility Site
- Alternative 3 – Use Existing Electric Line Towers and 230-kV Line Looping
- Alternative 4 – No Action/No Project

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With Alternative 4, none of the project components would be built. Alternative 4 is equivalent to the No Project Alternative required for analysis by the California Environmental Quality Action (CEQA Guidelines Section 15126.6(e)).

### 2.1.5 FEATURES COMMON TO ALL ACTION ALTERNATIVES

Features common to all action alternatives are detailed in this section. Project features and construction methods listed in this section will serve as the basis of the environmental impact analysis in Chapter 4.0.

The action alternatives have a common description of site location, CSE Facility design, Gen-tie Line alignment, construction, operations and maintenance, decommissioning and restoration. To avoid redundancy, this section presents a single project description that identifies the elements common to all alternatives and then separately identifies the elements unique to each alternative.

#### 2.1.5.1 SITE LOCATION

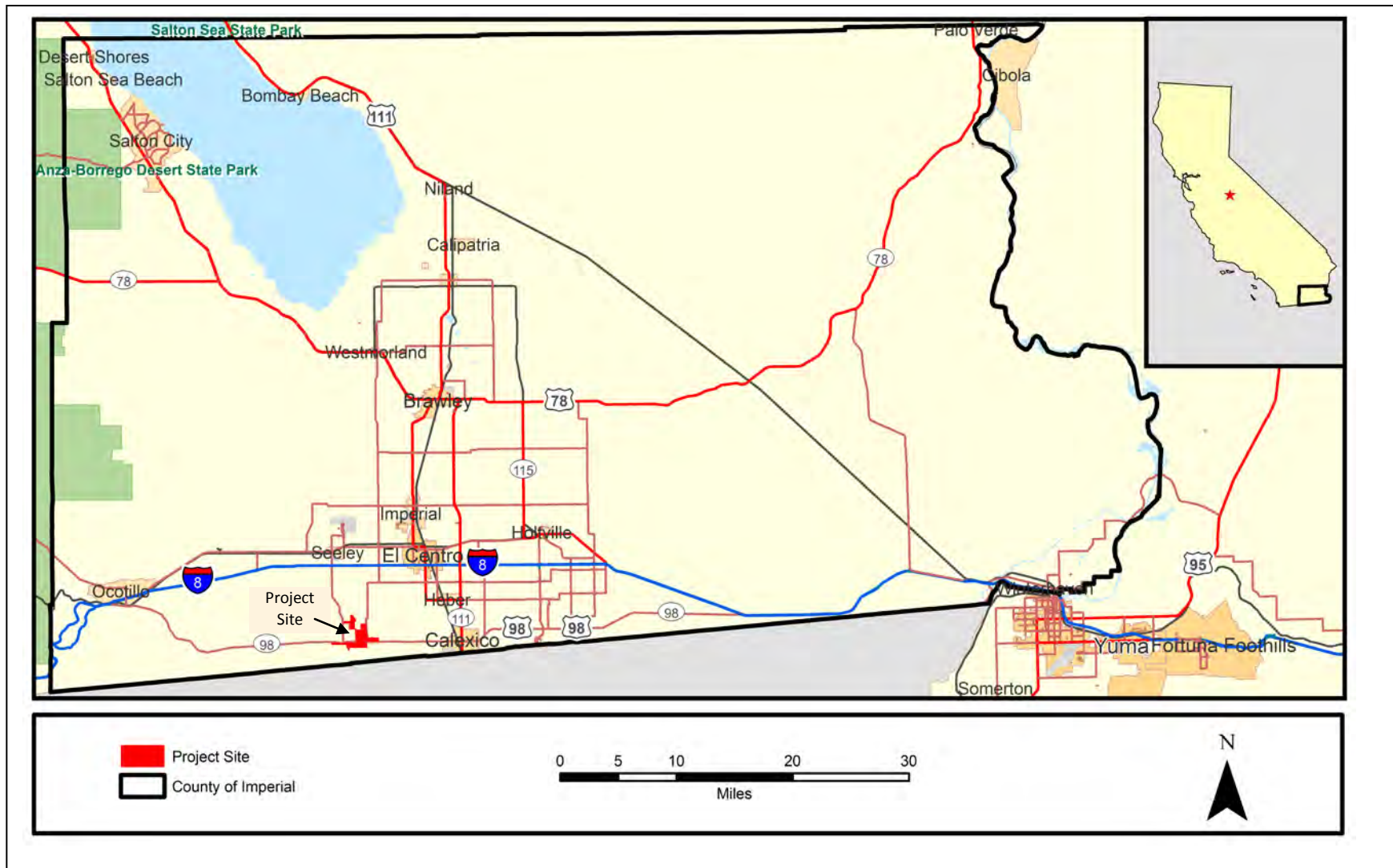
The proposed project/Proposed Action consists of two primary components in unincorporated western Imperial County southeast of the Imperial Valley Substation: 1) the CSE Facility; and 2) the Gen-tie Line. The proposed project/Proposed Action (which includes the CSE Facility on private land and Gen-tie Line corridor through private property easements and federal [BLM] land) is south of Seeley, California, near Mount Signal and approximately eight miles southwest of the City of El Centro. **Figure 2.0-1** depicts the regional location of the property. **Figure 2.0-2** provides an aerial photograph of the CSE Facility parcels, private property easements through which the Gen-tie Line would extend, the proposed Gen-tie Line alignment through lands managed by the BLM, and the immediate surrounding area.

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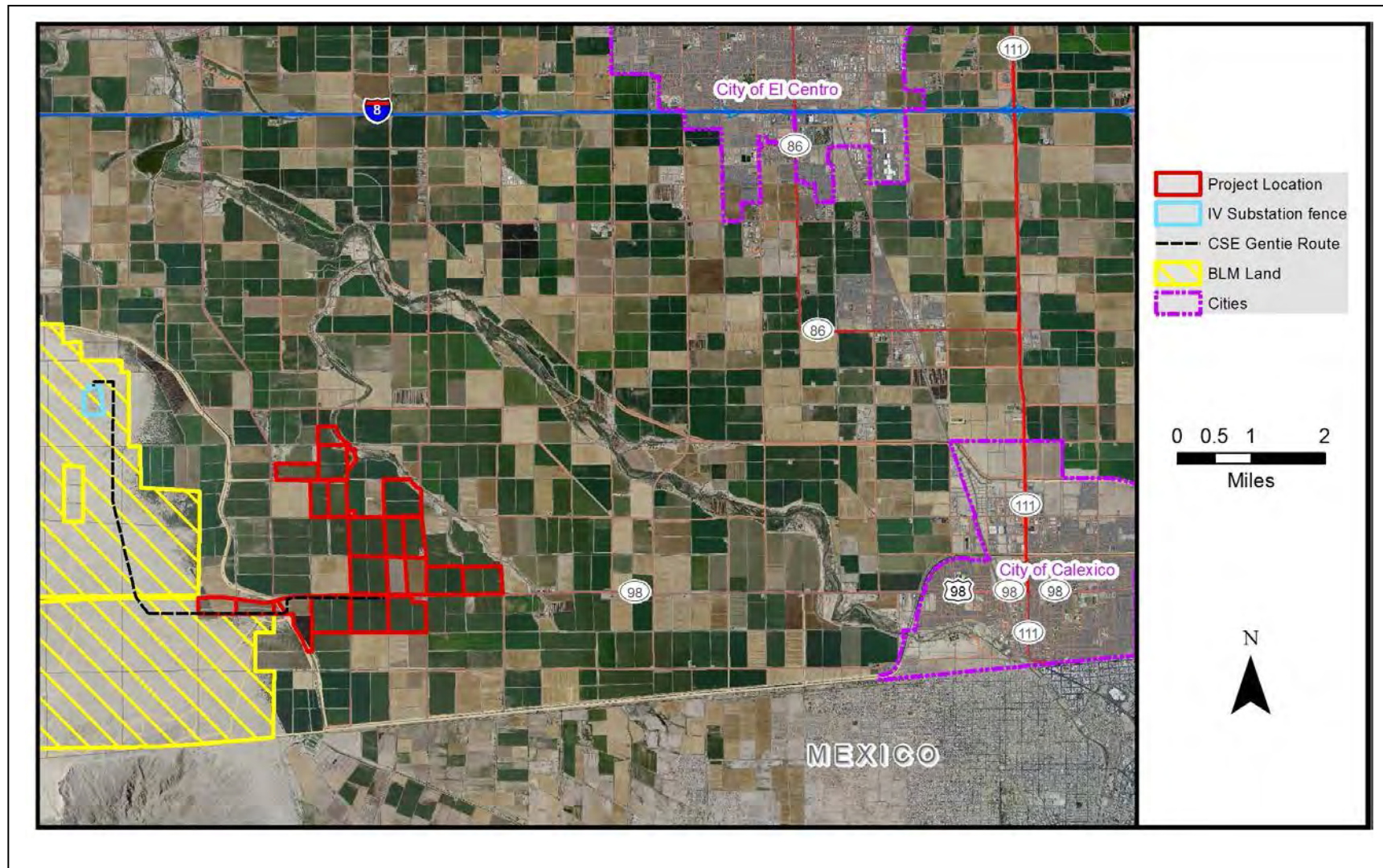
Source: Imperial County GIS, 2011.

FIGURE 2.0-1  
REGIONAL LOCATION MAP

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Source: Imperial County GIS, 2011.

FIGURE 2.0-2  
AERIAL MAP OF PROJECT SITE AND SURROUNDING AREA

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### 2.1.5.2 CENTINELA SOLAR ENERGY (CSE) FACILITY PROJECT CHARACTERISTICS

#### A. Existing Uses and Features

The CSE Facility site is approximately 2,067 acres and generally bounded on the east by Rockwood Road and on the west by Drew Road. The site boundaries follow parcel lines rather than roads or other physical features. California State Route (SR) 98 bisects the southern portion of the site and Kubler Road bisects the central portion of the site. **Figure 2.0-3A** provides an overview of the project site, federal land managed by the BLM and proposed Gen-tie Line route. **Figure 2.0-3B** shows the western parcels of the CSE Facility site and the extension of the Gen-tie Line through lands managed by the BLM to the Imperial Valley Substation.

The Applicant controls the CSE Facility site through a combination of options to purchase, options to lease, and fee ownership by an affiliate. **Table 2.0-1** identifies the assessor parcel numbers, acreages, and general locations of the parcels that comprise the CSE Facility site (**Table 2.0-2** in subsection 2.1.5.2 summarizes the privately owned parcels associated with the Gen-tie Line). **Figure 2.0-4** shows the project parcels comprising the CSE facility site and private property easements.

**TABLE 2.0-1  
PRIVATELY OWNED PARCELS - CSE FACILITY SITE**

Assessor's Parcel Number	Acreage**	Nearest Cross Street/Intersection
052-170-018	79.06	Kubler Road & Pulliam Road, Calexico, CA
052-170-019	78.29	Wormwood Road & Fisher Road, Calexico, CA
052-170-034	93.75	Kubler Road and Brockman Road, Calexico, CA
052-170-035*	87.93	SR 98 and Brockman Road, Calexico, CA
052-170-036	164.43	SR 98 and Pulliam Road, Calexico, CA
052-170-050	113.05	Wormwood Road & Fisher Road, Calexico, CA
052-170-052	16.78	Fisher Road & Pulliam Road, Calexico, CA
052-170-068	154.68	Kubler Road & Brockman Road, Calexico, CA
052-170-074	81.75	Wormwood Road & Fisher Road, Calexico, CA
052-170-076*	164.83	Kubler Road and Pulliam Road, Calexico, CA
052-170-077	88.42	Kubler Road & Brockman Road, Calexico, CA
052-170-078*	82.64	SR 98 and Brockman Road, Calexico, CA
052-430-009	50.67	Wormwood Road and Lyons Road, Calexico, CA
052-180-032	120.00	Rockwood Road and SR 98 Calexico, CA
052-180-033	120.00	Brockman Road and SR 98 Calexico, CA
052-170-058	4.30	602 Pulliam Road, Calexico, CA
052-190-010	150.0	SR 98 and Brockman Road, Calexico, CA
052-190-009	160.0	SR 98 and Pulliam Road, Calexico, CA
052-190-008	160.0	SR 98 and Pulliam Road, Calexico, CA
052-190-007	96.81	SR 98 and Westside Main Canal, Calexico, CA

\*Denotes parcels under Williamson Act Contract

\*\* Acreage values provided by Imperial County Assessor's Office

Source: CSE, 2011a.

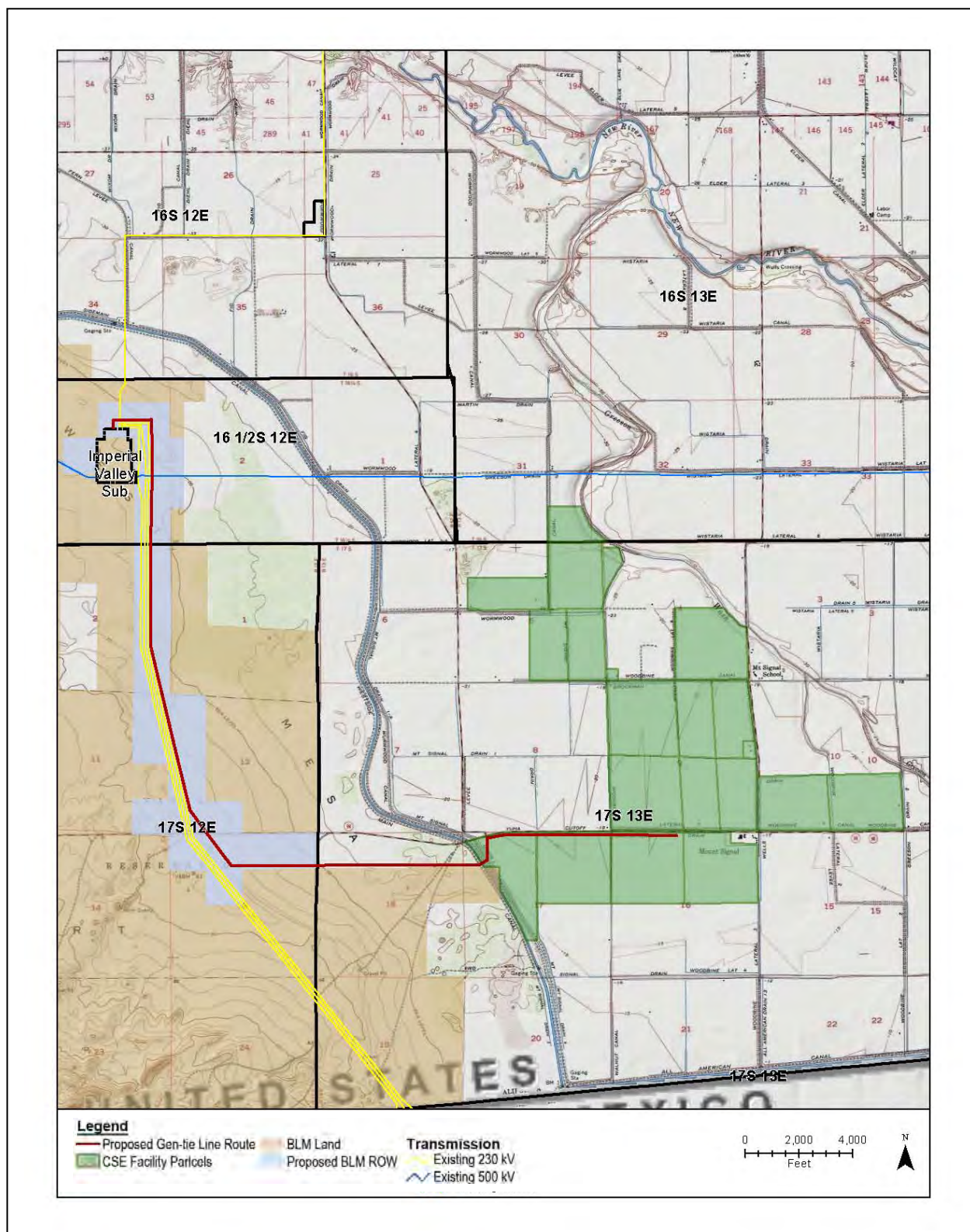
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Source: CSE, 2011e.

FIGURE 2.0-3A  
PROJECT OVERVIEW MAP

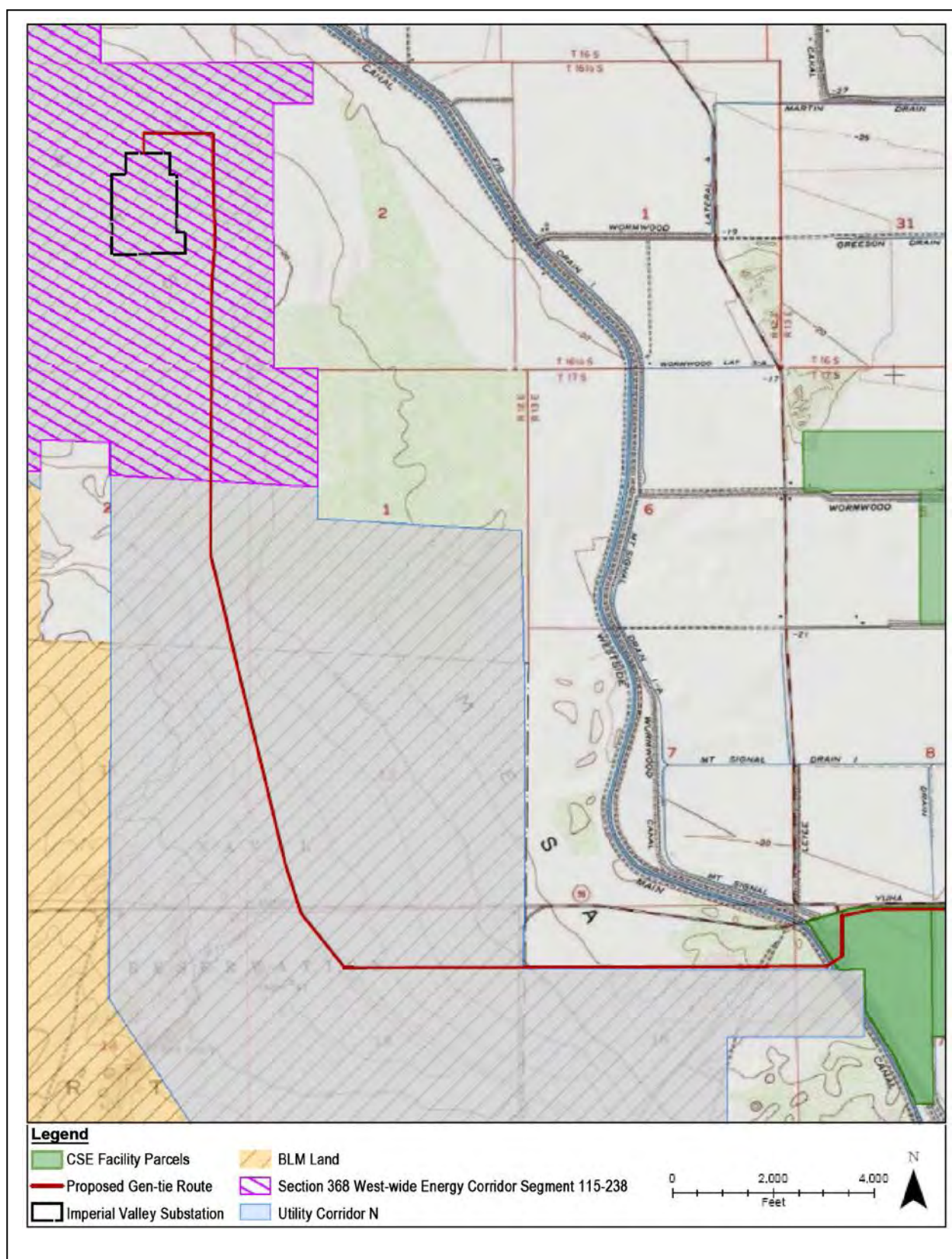
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Source: CSE, 2011b.

FIGURE 2.0-3B  
GEN-TIE LINE ROUTE THROUGH FEDERAL LAND MANAGED BY BLM

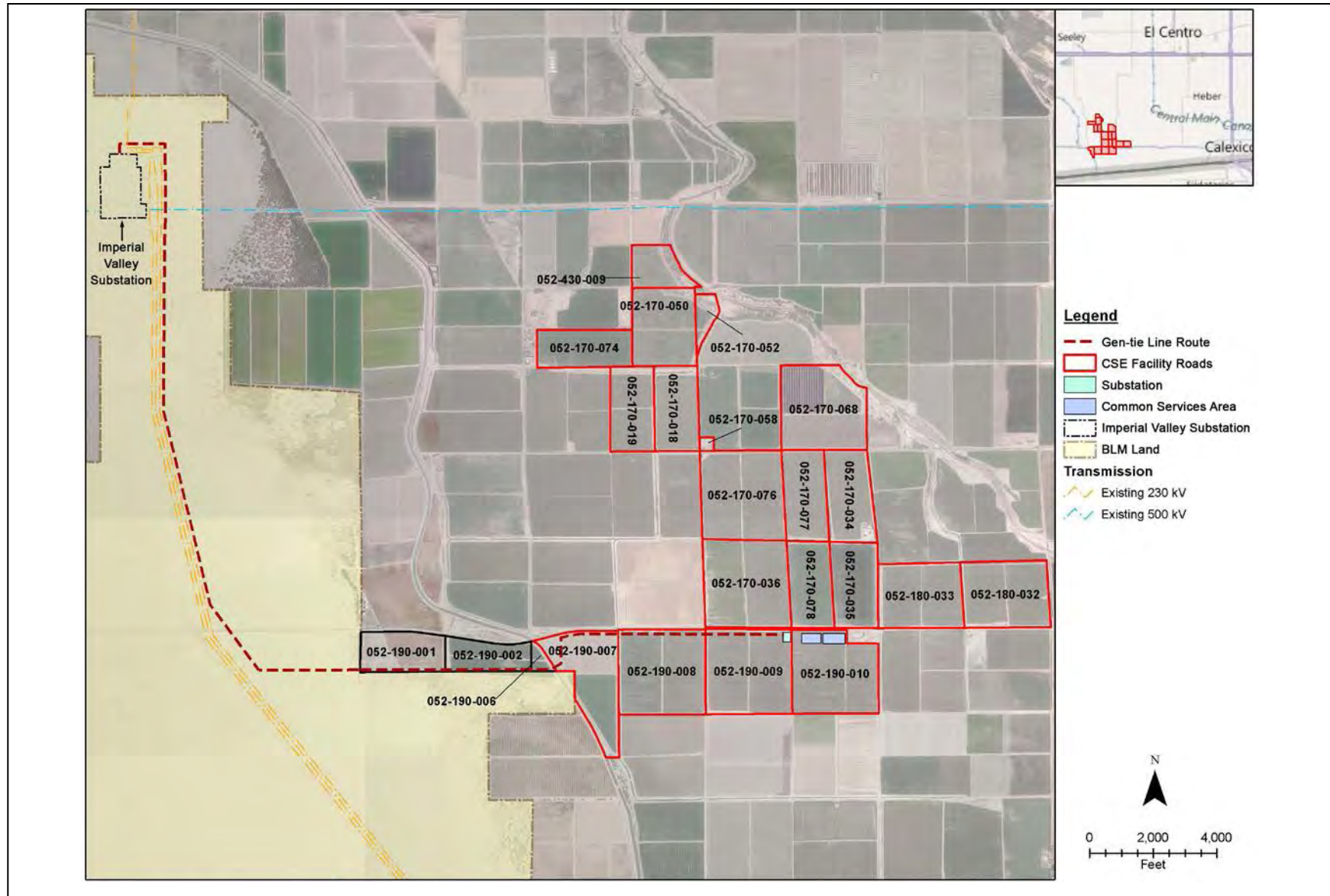
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Source: CSE, 2011e.

FIGURE 2.0-4  
CSE FACILITY AND PRIVATE PROPERTY EASEMENT PARCELS

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All of the parcels that comprise the CSE Facility site are agricultural lands. Of the 2,067 acres, approximately 1,861 acres are in active agricultural production, predominantly of non-food crops (e.g., forage crops such as bermuda grass and alfalfa). Two single-family residences (on parcels 052-170-018 and 052-170-076) are on the site and are planned to be demolished and removed. A mobile home on parcel 052-170-058 will be removed prior to construction. The CSE Facility site is also transected by irrigation canals, ditches and public roads. Overall, the entire site is relatively flat with elevations on the CSE Facility site averaging 20- to 25-feet below mean sea level (GS Lyon, 2010b, 2011a).

### B. General Plan and Zoning Designations

The Imperial County Land Use Plan designates all of the private lands in the CSE Facility site as “Agriculture.” Development of a solar facility would preclude agricultural crop production for the life of the CSE Facility on the lands upon which it is located. However, the CSE Facility could be removed and the site returned to agricultural production at the end of the useful life of the CSE Facility, which is expected to be 30+ years.

Lands on which the CSE Facility is proposed are zoned A-2 - General Agriculture, A-2-R - General Agriculture, Rural Zone, and A-3 - Heavy Agriculture. Solar energy electrical generators, electrical power generating plants, substations, and facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural zones. In keeping with the provisions of the zoning designations, the Applicant is seeking a Conditional Use Permit (CUP).

### C. CSE Facility Design

The proposed CSE Facility would use solar photovoltaic (PV) technology to convert sunlight directly into direct current (DC) electricity. The process starts with PV cells that make up photovoltaic modules. Groups of PV modules are wired together to form a PV array. The DC from the array is collected at inverters where the DC is converted to alternating current (AC). The voltage of the electricity is increased by a transformer at each inverter. Medium voltage electric lines (underground and/or overhead) are used to collect the electricity from each transformer and transmit it to the facility substation, where the voltage is further increased by a high voltage transformer to match the electric grid. The ultimate generation capacity of the CSE Facility is anticipated to be up to 275-megawatts (MW) AC.

The use of solar PV technology is consistent with the definition of an “eligible renewable energy resource” in Section 399.12 of the California Public Utilities Code and the definition of “in-state renewable electricity generation facility” in Section 25741 of the California Public Resources Code.

The CSE Facility site plan provides a representative site arrangement of the solar component of the project. **Figure 2.0-5** shows the areas that would be developed as part of the CSE Facility and the overall project layout. **Figure 2.0-6** shows the Conditional Use Site Plan for the overall CSE Facility.

The CSE Facility consists of the following general components and design features:

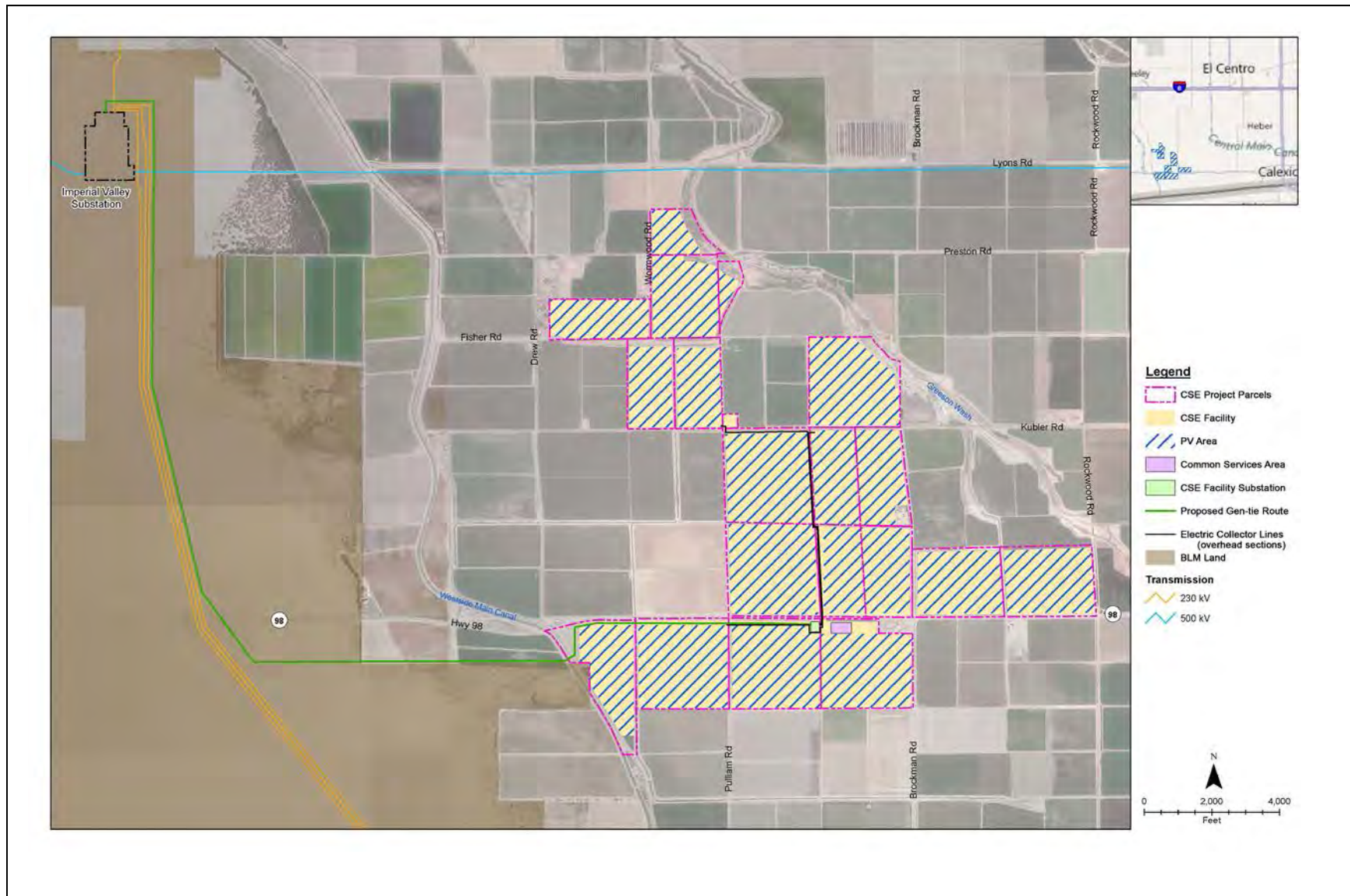
- The PV Arrays: PV arrays includes the PV modules, mounting structures, DC electrical wiring, power conditioning equipment including inverters and transformers, and the AC collector system that transmits electricity from the PV Arrays to the CSE Facility substation.

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Source: CSE, 2011e.

FIGURE 2.0-5  
PROJECT LAYOUT

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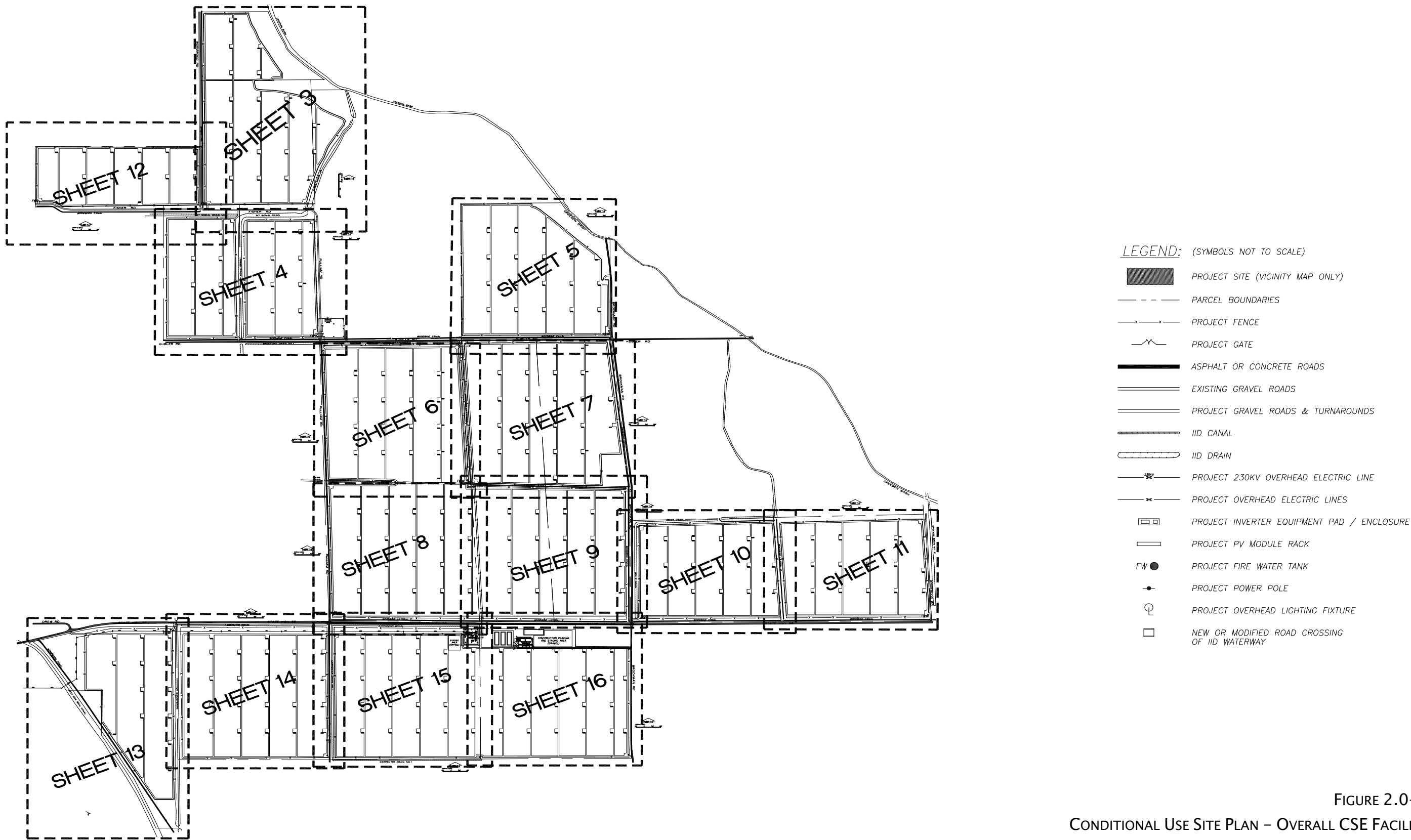


FIGURE 2.0-6  
CONDITIONAL USE SITE PLAN – OVERALL CSE FACILITY

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- The CSE Facility substation: Electricity from the PV Arrays is aggregated at the substation and stepped up to 230-kV by high-voltage 230-kV transformer(s) and then transmitted over the Gen-tie Line to the Imperial Valley Substation.
- Ancillary Systems: The plant ancillary systems control, protect and support the CSE Facility and its operation. The ancillary systems include fencing, security, lighting, fire protection, access roads, and other systems.
- Other Site Design Features and Considerations: Grading, excavations and drainage.

Each of these is described in further detail below.

### **PV Arrays**

PV Arrays are the largest component of the CSE Facility. The equipment in the PV Array includes the PV modules (also referred to as panels), mounting structures, associated power conditioning equipment, and the AC collector system. Individual PV solar modules are grouped with an inverter to form PV Array “blocks” that are each typically capable of generating 1- to 3-MW.

**Photovoltaic Solar Modules:** PV module designs vary by manufacturer, but the energy production mechanism is the same for all: direct conversion of sunlight energy into electricity. PV modules are rectangular in shape and use anti-reflective coatings to increase conversion efficiency. No fossil fuels or water is consumed, nor are any air emissions produced, by the PV modules electric production. PV panels are electrically wired together to form arrays.

**Panel Racking and Foundation Design:** The PV modules will be mounted on racks supported by steel support structures that are anchored or driven into the ground. The PV module racks will be designed in one of two ways: 1) fixed at an angle tilted upwards (20 degrees to 30 degrees) and oriented south or southwest or 2) a single-axis-tracking system aligned on a north-south axis and that tracks the sun from east to west. The final PV array field footprint and design will depend on the specific technology supplier chosen at the time of final design. Typical panel coverage to ground coverage ratio is anticipated to range from 0.35 to 0.52. The ground coverage ratio range (GCR) is the area that the solar panels are above when directly above the panel divided by the amount of land used to install the solar panels (includes row spacing). The GCR relates specifically to the PV arrays and does not account for setback lines, roads, inverters, and other structures within the solar field.

Anchoring of the PV racks is expected to be accomplished with driven metal piers or augured metal piers. Alternatively, anchoring may be accomplished with at-grade concrete ballast blocks or poured concrete piers. Selection of the anchoring system will depend on soil conditions and final design considerations. Typical PV mounting foundations and depths are shown on **Figure 2.0-7**. The deepest foundations would be required for the driven tube pedestal. In contrast, concrete encased pedestal foundations would require the shallowest depth but also the most excavation to pour the concrete.

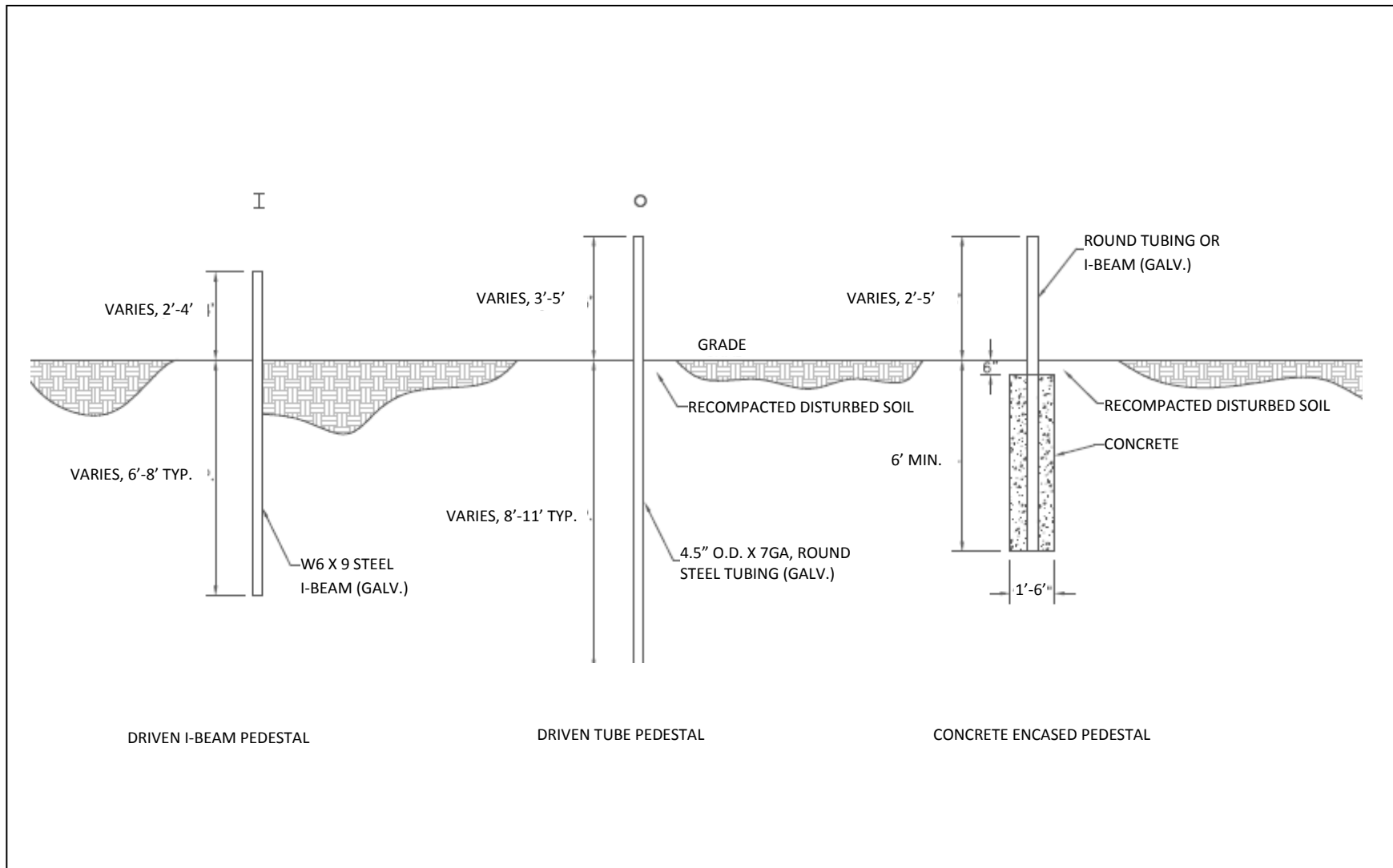
**Figure 2.0-8** shows a representative 1-MW block of PV panels for the fixed tilt mount configuration. **Figure 2.0-9** depicts representative 1-MW block of PV panels for single-axis tracker mounting. PV panels on fixed tilt mounting structures are typically six to eight feet above ground level at the highest point with a typical ground clearance of two feet (**Figure 2.0-10**). Similarly, the maximum typical height for a horizontal axis tracker is six to eight feet above ground level (**Figure 2.0-11**).

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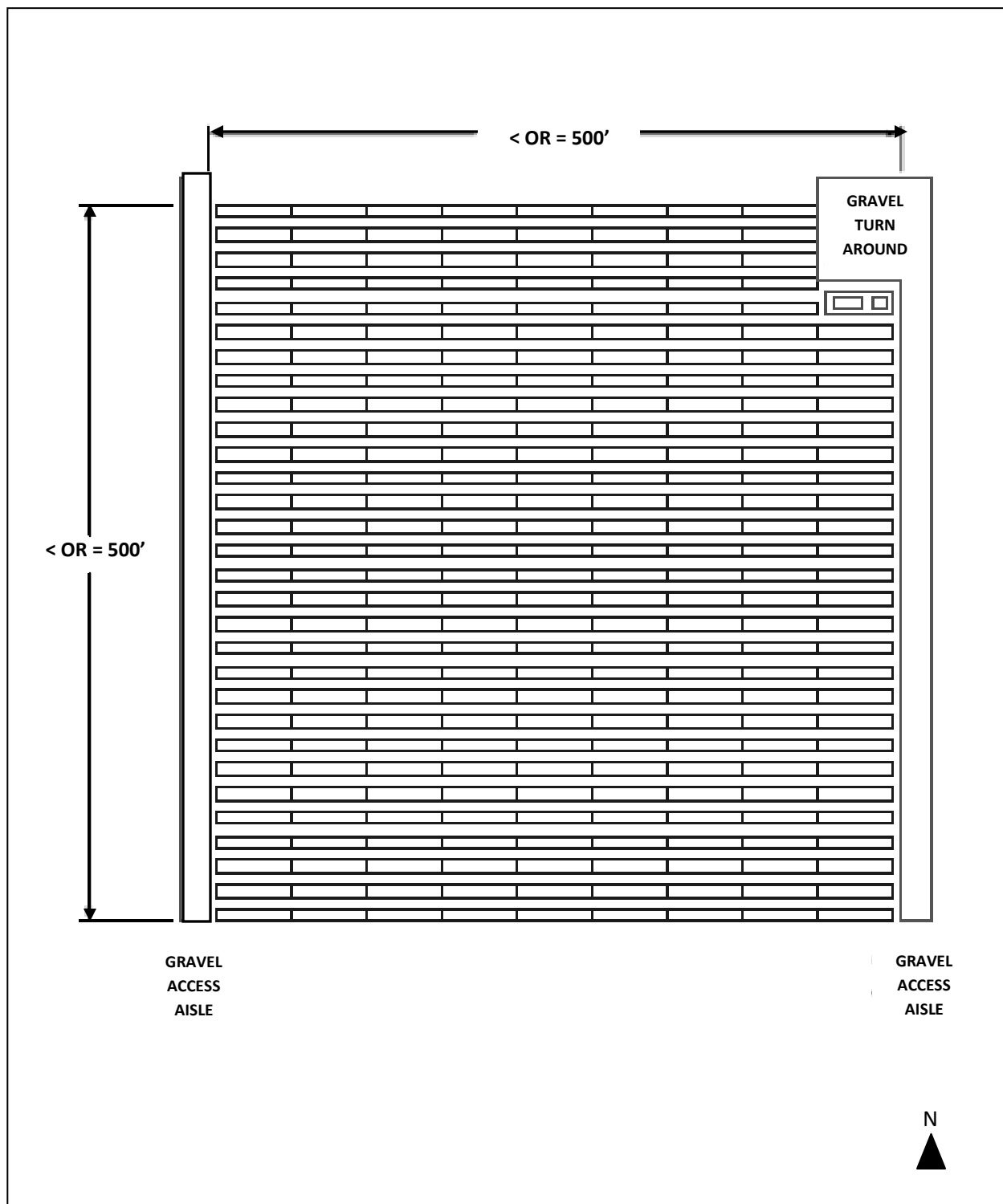


Source: CSE, 2011b.

FIGURE 2.0-7  
REPRESENTATIVE PV MOUNTING FOUNDATIONS

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Source: CSE, 2011b.

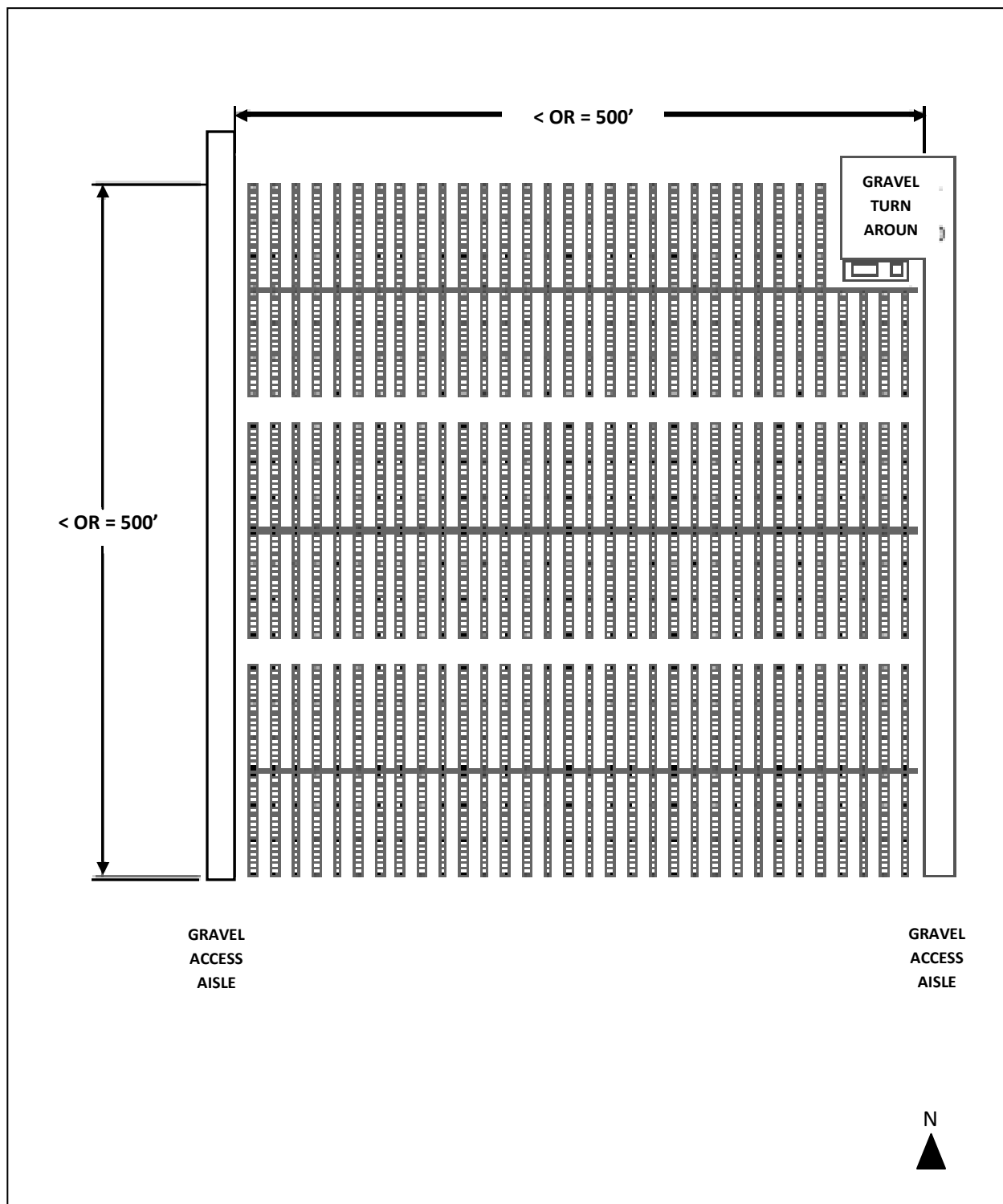
FIGURE 2.0-8  
REPRESENTATIVE 1-MW BLOCK FIXED TILT MOUNT

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Source: CSE, 2011b.

FIGURE 2.0-9  
REPRESENTATIVE 1-MW SINGLE AXIS TRACKER MOUNT

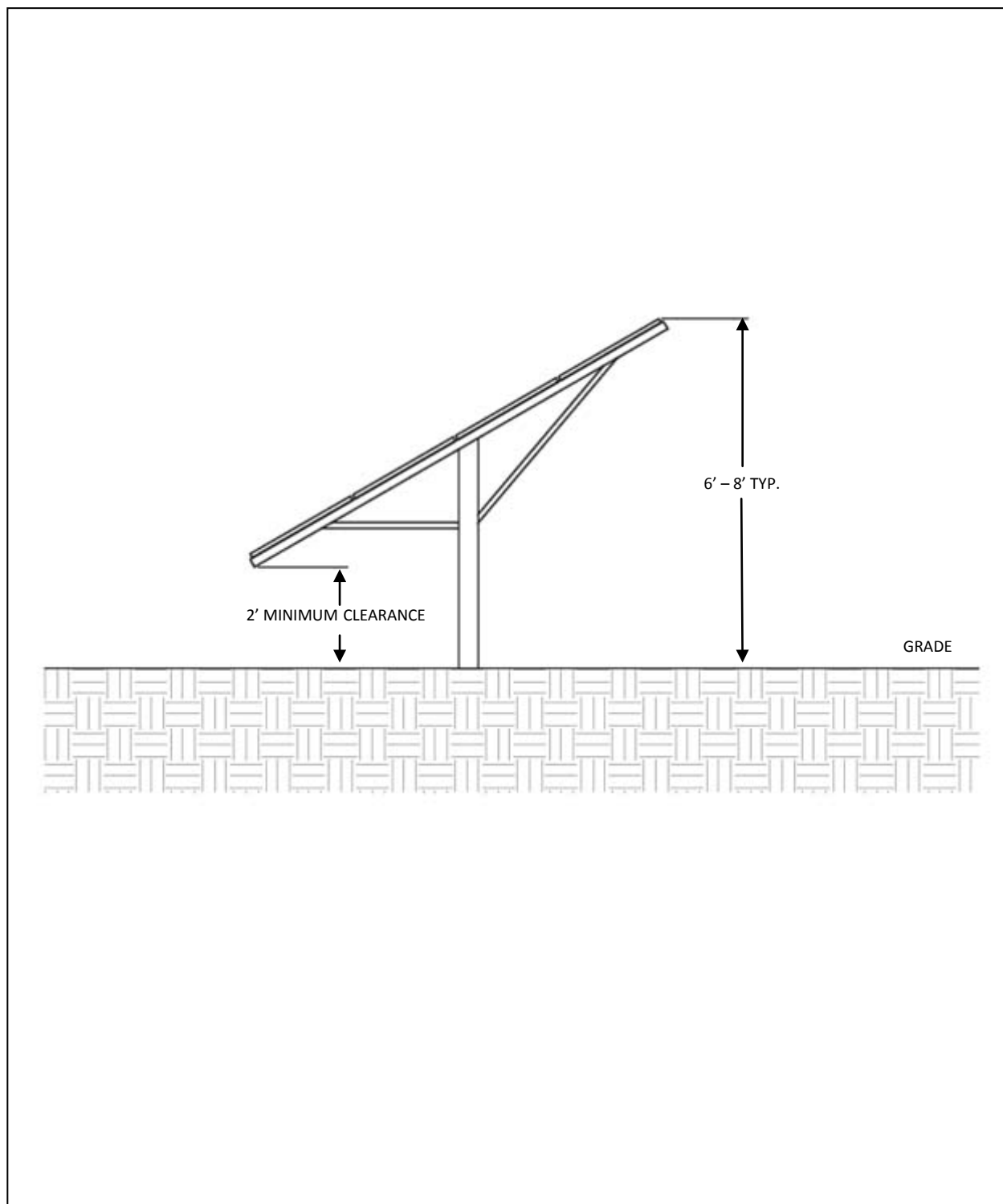
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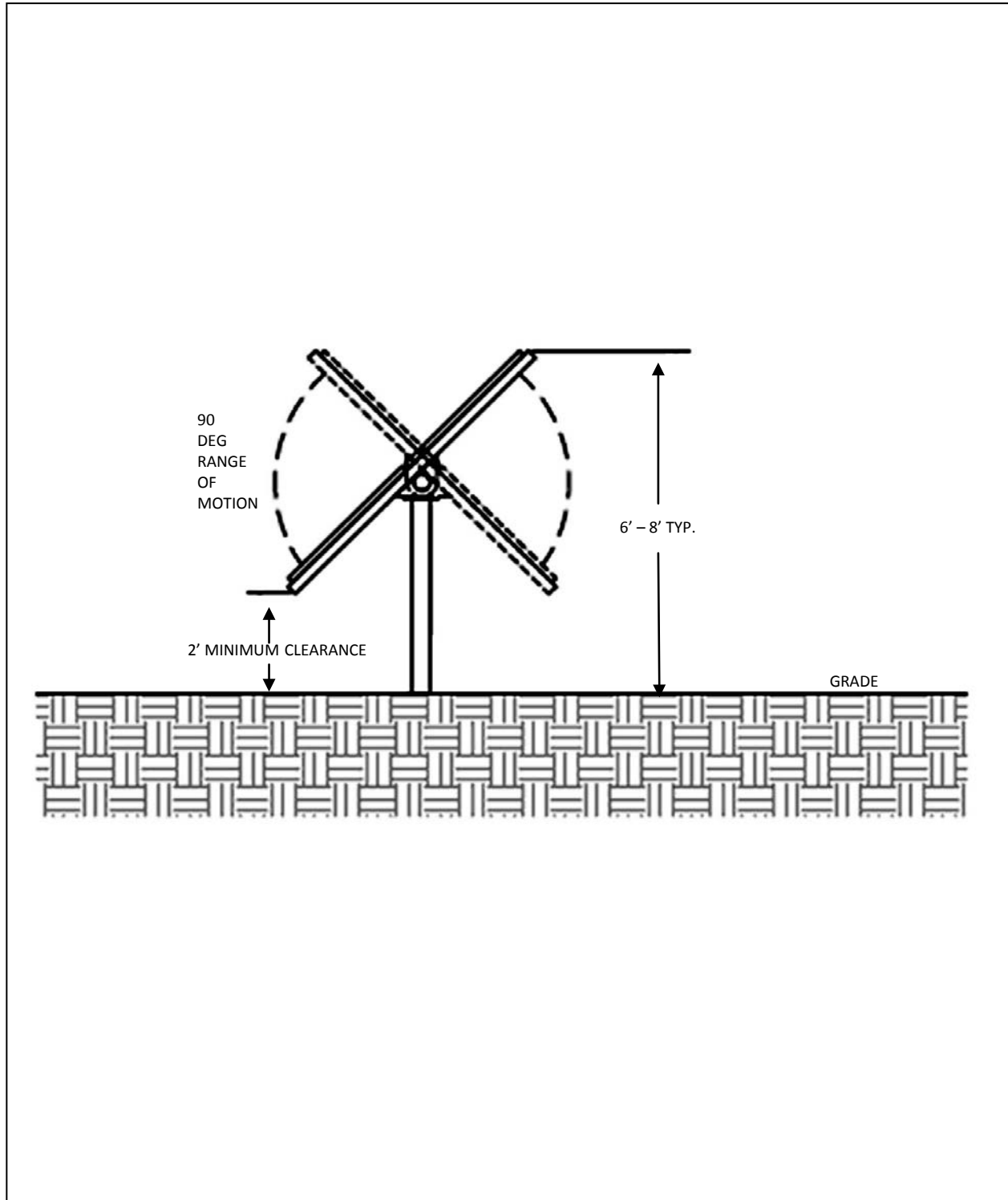
FIGURE 2.0-10  
REPRESENTATIVE PV MOUNTING PROFILE – FIXED TILT MOUNT STRUCTURE

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Source: CSE, 2011b.

FIGURE 2.0-11  
REPRESENTATIVE PV MOUNTING PROFILE – HORIZONTAL AXIS TRACKER STRUCTURE

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**Inverter and Transformer Station:** Strings of PV modules are fused and electrically combined together inside combiner boxes that are throughout the array on, or adjacent to the module racking. Groups of combiner boxes are then electrically connected through underground wiring to the inputs of a single inverter or several inverters located together that act as a single inverter. Inverters take the DC electricity produced by the PV modules and convert it AC electricity. A transformer increases the voltage of the electricity so that the power can be economically and efficiently transported within the site to the facility substation.

Inverters will be designed for outdoor installation or inside an unoccupied, electrical enclosure on a concrete foundation. The concrete foundation will be up to 45-feet long and 15-feet wide. Inverter enclosures will be approximately 12 feet in height and transformers will be approximately 6 feet in height (**Figure 2.0-12**). Exterior surfaces will be finished with a neutral, non-reflective color.

**AC Collector System:** The AC collector system is comprised of electrical cables that connect the inverters to the CSE Facility substation. These medium voltage cables (typically 34.5-kV) are located underground in trenches throughout the CSE Facility site. Generally, underground cables would collect power from PV arrays in a localized area. Once the underground cable has reached its design capacity it would extend to risers to be placed on higher capacity overhead medium voltage lines or continue underground to the CSE Facility substation. Overhead medium voltage electric lines will be located on wood poles typically 60 to 70 feet tall and spaced 250 to 350 feet apart.

### **CSE Facility Substation**

The CSE Facility substation is in the southern portion of the CSE Facility site, immediately south of SR 98, approximately mid-way between Pulliam Road and Brockman Road (refer to **Figure 2.0-5** and **Figure 2.0-6**). The purpose of CSE Facility substation is to aggregate the AC collector lines and increase the voltage of the electricity to 230-kV for connection with the electric grid. The substation will include transformers, medium-voltage and high-voltage circuit breakers, capacitor banks electrical bus work, meters, disconnect switches and an electrical control house. To protect against over-voltages caused by lightning strikes, lightning arresters, overhead shield wires, and lightning masts will be installed in the substation.

Instrument transformers, relays, and a communication network will detect, isolate and clear electrical faults as soon as practical to ensure the safety of equipment, personnel, and the public. Protective relaying will meet Institute of Electrical and Electronic Engineers (IEEE) requirements and will be coordinated with grid protection to ensure system reliability and safety is maintained.

A conceptual drawing of the CSE Facility substation is provided in **Figure 2.0-13** and **Figure 2.0-14**.

### **Common Services Area Facilities**

Structures and equipment associated with the common services area are described below and shown in **Figure 2.0-15**:

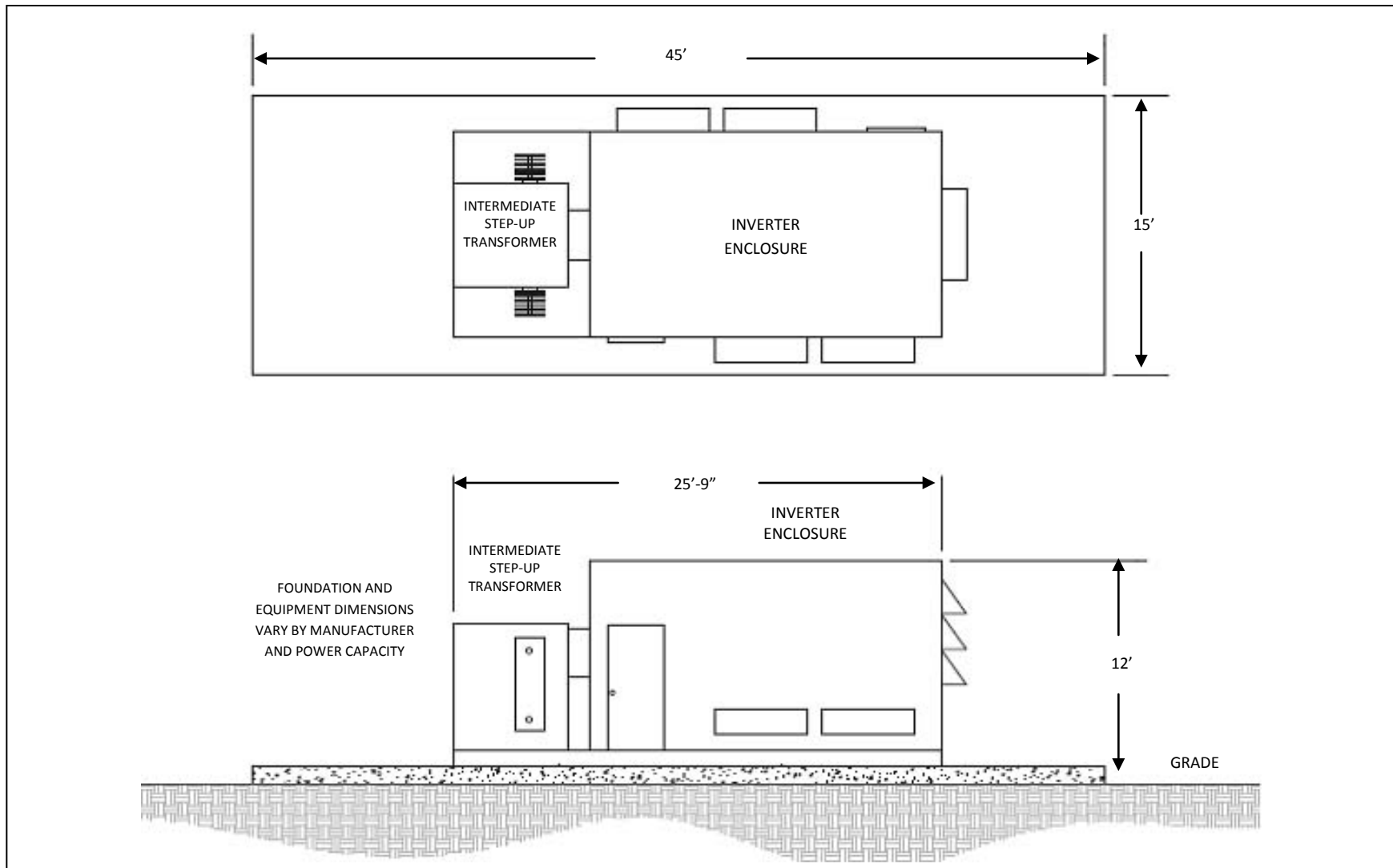
**Operations and Maintenance (O&M) Building.** This building will serve as both an office for the CSE Facility and a maintenance shop/warehouse. The office portion of the building will house facility staff and include facilities common to a business office such as a conference room, offices, break room, and restrooms. A control room, where facility staff monitor and control operation of the facility will also be in this building. The O&M building will include a maintenance shop and warehouse area where facility staff can bring equipment for testing, repairs or maintenance. The maintenance/warehouse area will include work benches and storage for tools, materials, and spare parts.

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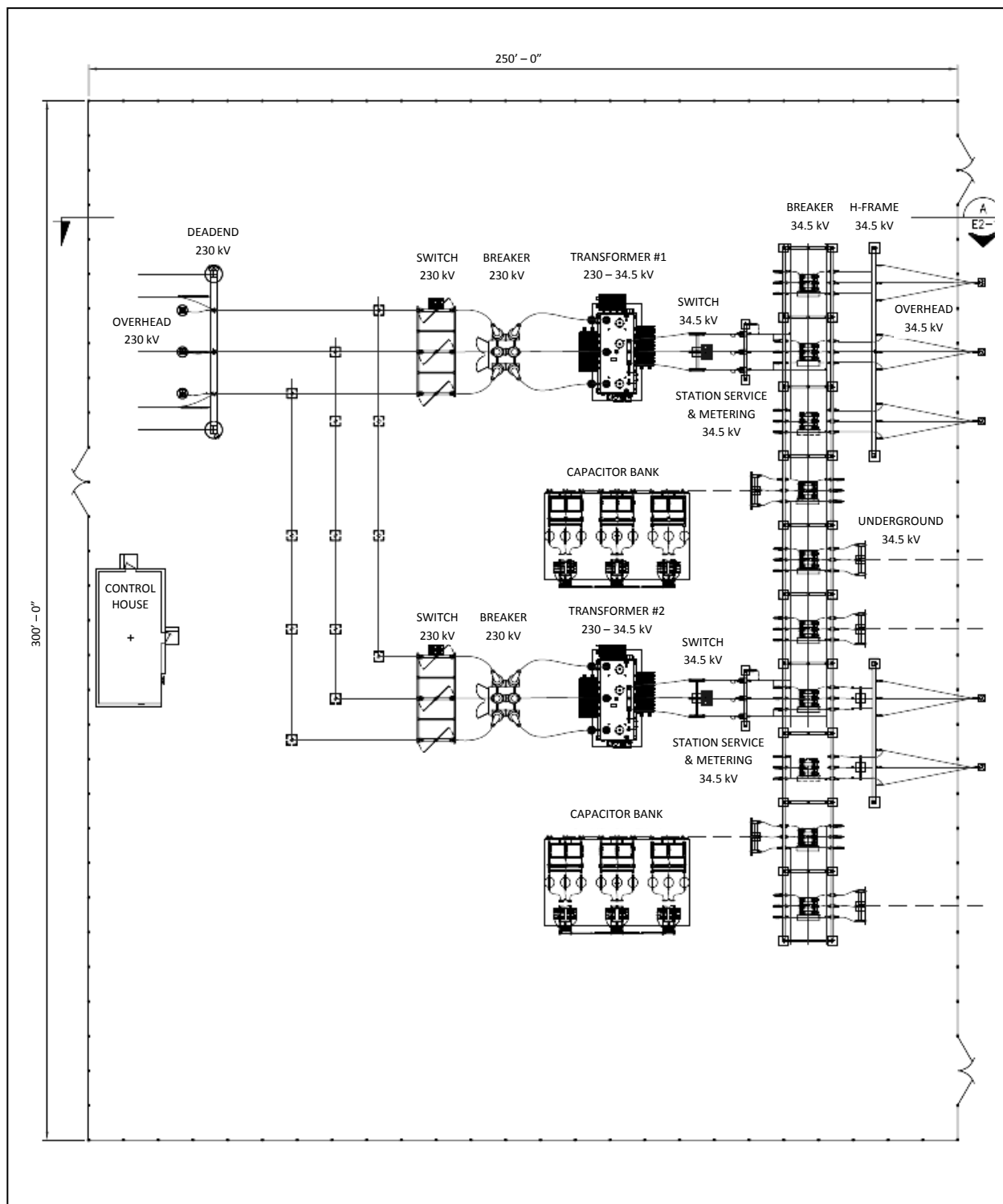
Source: CSE, 2011b.

FIGURE 2.0-12  
REPRESENTATIVE 1-MW ENCASED INVERTER ENCLOSURE/PAD

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Source: CSE, 2011b.

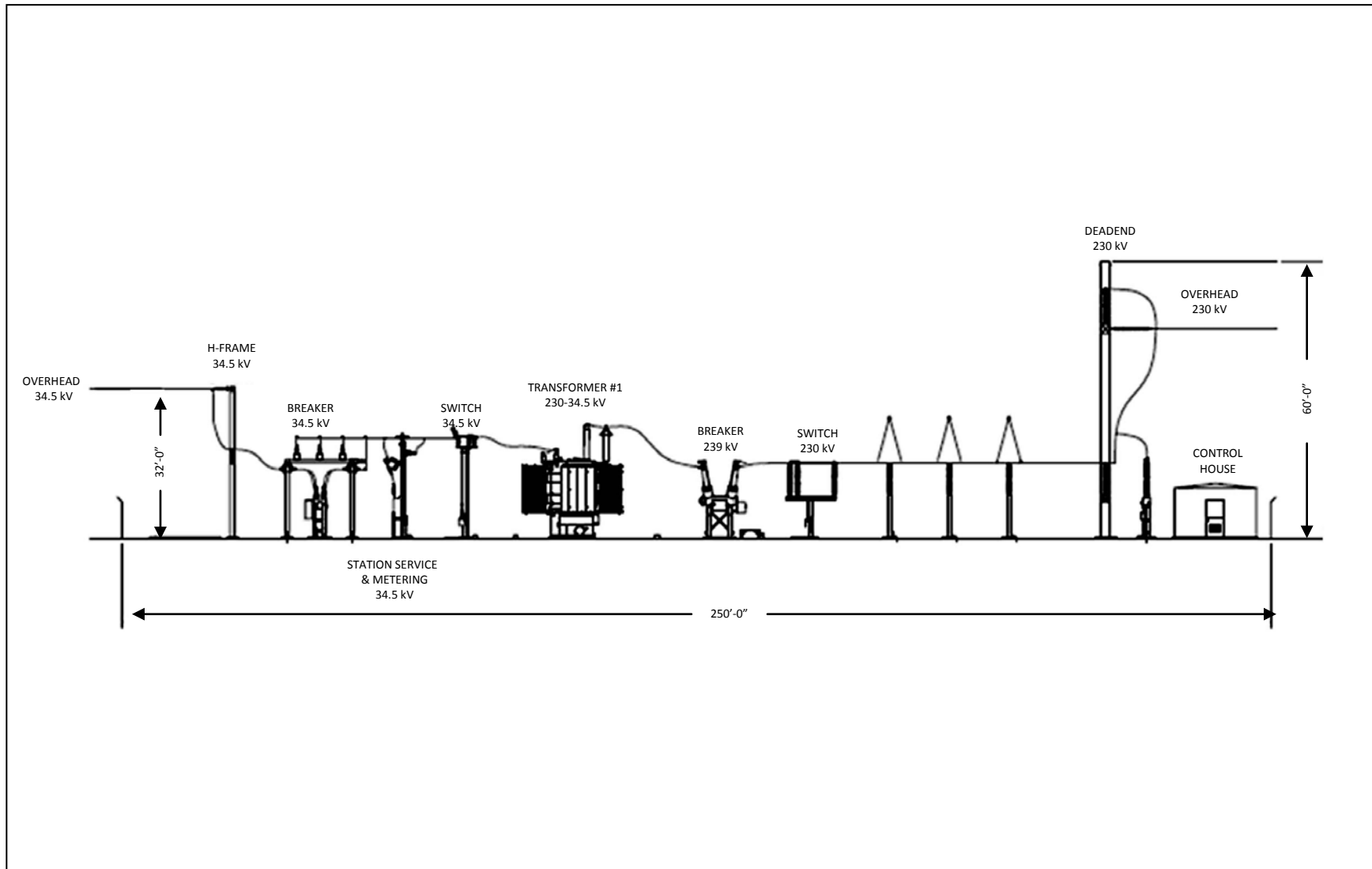
FIGURE 2.0-13  
CSE FACILITY SUBSTATION (CONCEPTUAL)

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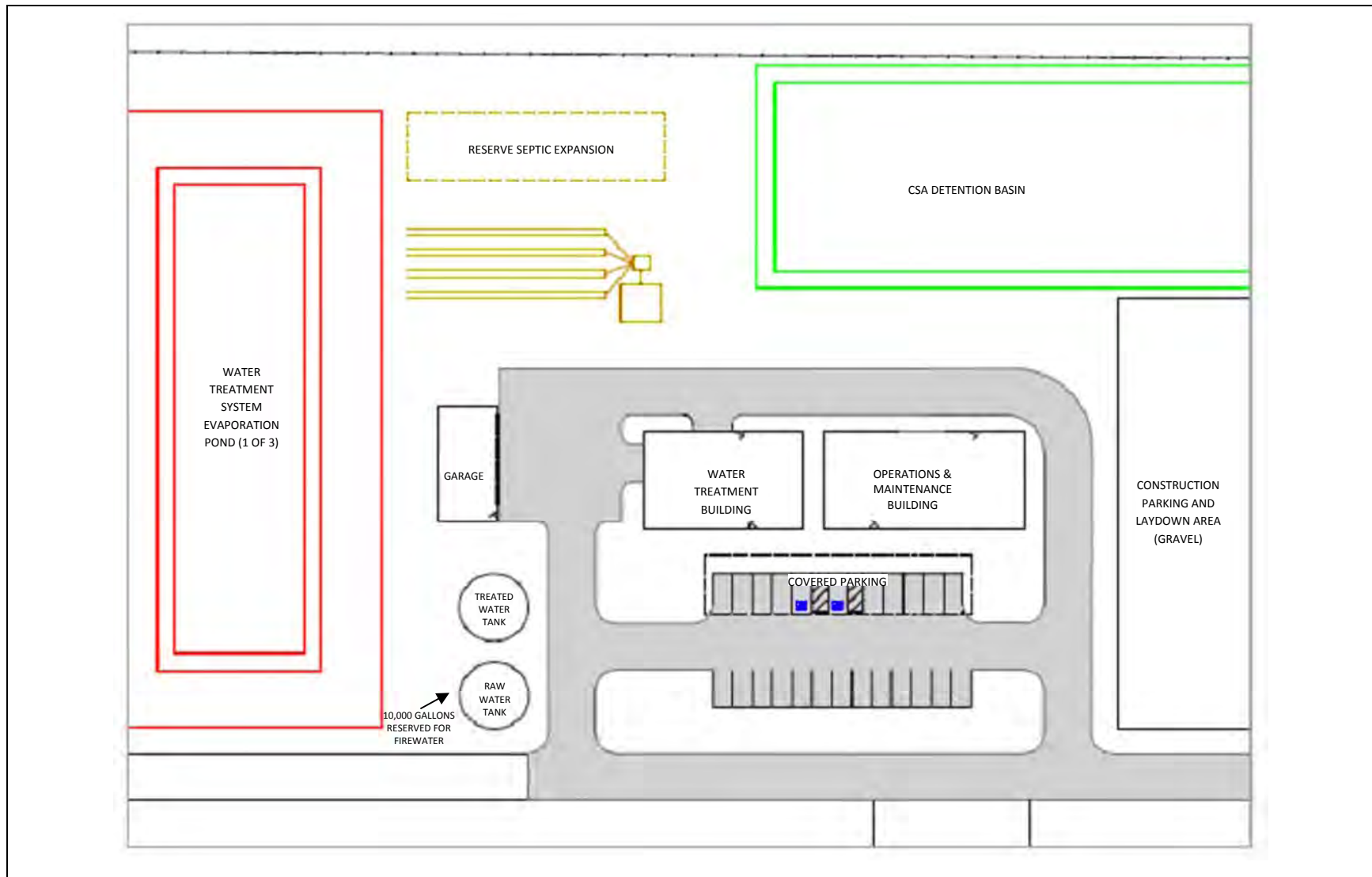


Source: CSE, 2011b.

FIGURE 2.0-14  
CSE FACILITY SUBSTATION (CONCEPTUAL) LOOKING SOUTH

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Source: CSE, 2011.

FIGURE 2.0-15  
COMMON SERVICES AREA FACILITIES



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**Garage.** This building will house facility vehicles used for operations and maintenance (O&M) such as trucks, tractors or carts.

**Water Treatment Building.** If the Applicant elects to have a permanent on-site water treatment system to treat water for panel washing, the water treatment system would be located in this building.

**Raw/Fire Water Tank:** The CSE Facility will require water for domestic use, solar panel washing and fire protection. A 200,000-gallon tank will store raw (i.e., untreated) water. A portion of the raw water storage will be reserved and dedicated to provide water for fire protection for the CSE Facility. Additional 10,000 gallon fire water tanks will be located throughout the CSE Facility site (see Fire Protection below).

**Treated Water Tank.** If the Applicant elects to have a permanent on-site water treatment system, a 200,000-gallon tank will store treated (i.e., demineralized) water for panel washing. Bottled water, or a similar potable water delivery service, will be used at the site for drinking water.

**Evaporation Ponds.** These ponds would be constructed if the Applicant elects to have a permanent on-site water treatment system to treat water for panel washing. The ponds would store and evaporate processed water from the water treatment system (e.g., brine from a reverse osmosis system). The ponds will be above-ground, constructed of concrete, and lined with an impermeable material such as high density polyethylene. As necessary, the solids that accumulate in the evaporation ponds will be periodically removed. The solids will be characterized prior to removal and disposed of in compliance with applicable regulations governing disposal of solid waste.

**Septic System.** The CSE Facility will collect wastewater from sanitary facilities such as sinks and toilets in the operations and maintenance building. This waste stream will be sent to an onsite sanitary waste septic system and leach field. In consideration of the number of permanent employees (5 to 7 full-time, comparable to two households of average size), the soil conditions at the site and consultation with a local geotechnical contractor, an engineered septic system is expected to be installed and designed in compliance with standards established by the County Environmental Health Department.

Alternatively, the CSE Facility may be designed to direct these waste streams to an underground tank for storage until it is pumped out, on a periodic or as-needed basis, and transported for disposal at a licensed waste treatment facility.

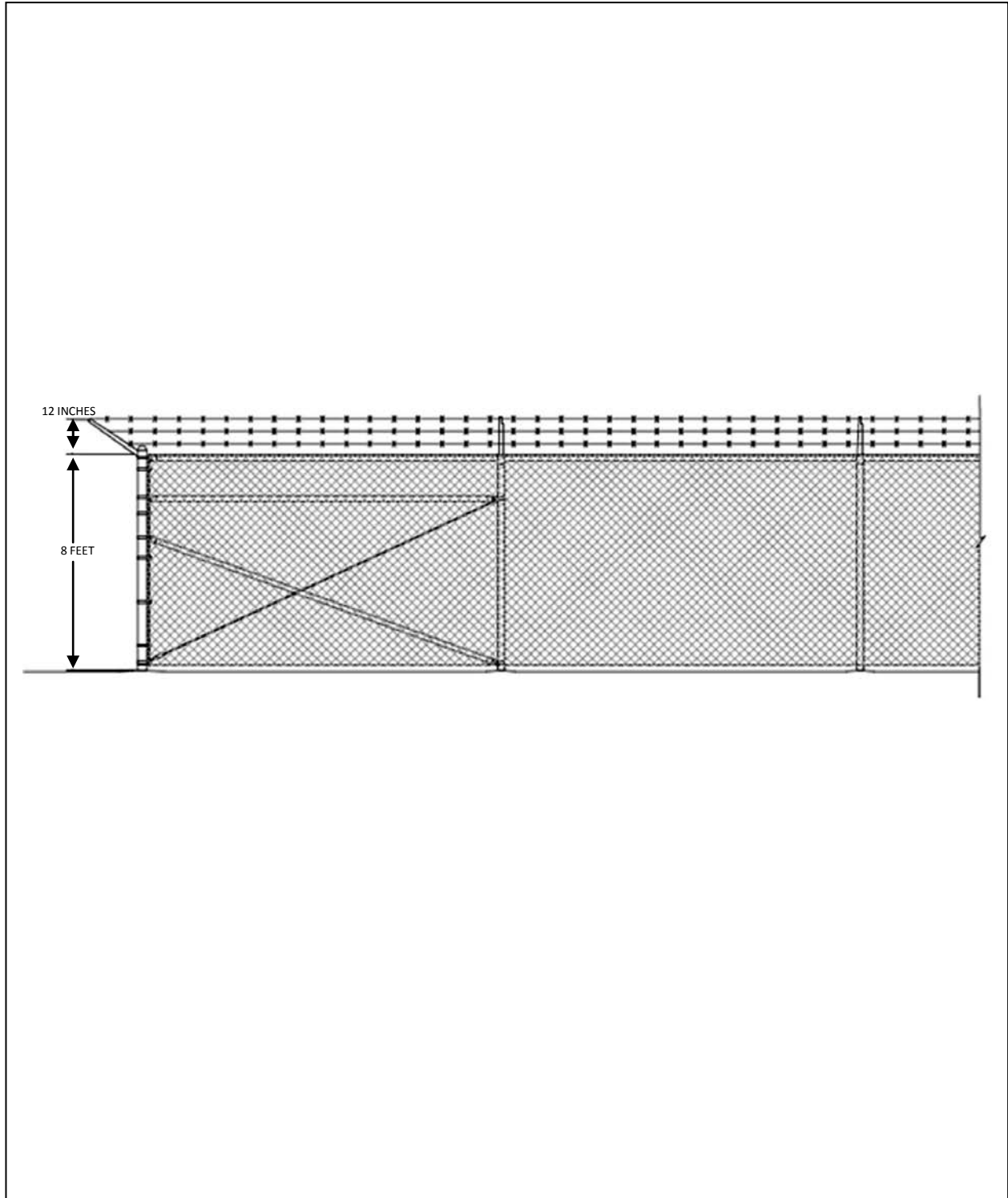
During periodic major maintenance events, portable restroom facilities may be provided to accommodate additional maintenance workers.

**Staff Parking.** Employees and visitors will use on-site parking provided at the common services area. Paved parking would include two handicap accessible spaces. The paved parking area will contain a total of approximately 24 parking spaces and approximately half of the spaces will be covered with an overhead canopy.

### **Auxiliary Facilities**

**Perimeter Fence:** Parcels for the CSE Facility will be grouped together or individually fenced based on their location relative to public roads, IID irrigation canals and IID drainage ditches. The proposed security fence will be 8-feet in height and constructed of 2-inch chain link diamond mesh topped with three-strand barbed wire with line posts a maximum of 10 feet apart around the entire perimeter of the CSE Facility site (**Figure 2.0-16**). Barbed wire is required for security and for safety (restricted access to

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Source: CSE, 2011b.

FIGURE 2.0-16  
REPRESENTATIVE FENCE DETAIL



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high voltage equipment). The CSE Facility substation will have a separate interior fence with barbed wire.

**Access Gates.** Each fenced parcel will have a least two entrances secured by locking gates (**Figure 2.0-17**). The main business entrance at the common services area (south of SR 98 off Brockman Roads) will have an access-controlled security gate and a hard surfaced road leading to the common services area buildings. Emergency services will have 24-hour access to enter through gates at each access point.

**Security System.** The security system provides for remote observation, recording, and alarming of site conditions. The security system includes cameras, lighting, and other hardware to detect and record the presence of intruders or other hazards on the CSE Facility site. Alarms will alert personnel to respond appropriately.

During unstaffed hours (such as nighttime), a third party security service will be hired to monitor the CSE Facility. The security monitoring will include the use of cameras, motion detectors and vehicular patrols of the site.

**Lighting System.** Outdoor lighting for the common services area of the CSE Facility will consist of fixtures secured to structures, equipment, walls and poles to provide illumination for maintenance vehicles and security. The lighting system would be designed to provide nighttime lighting levels consistent with applicable Imperial County lighting standards.

Switched lighting will be provided at the substation and inverters. In the solar field, lighting will be provided at the gates and other locations where necessary for security or safety.

**Access Roads.** Access to the project site will be provided via US Interstate 8 (I-8), SR 98 and local roads. From I-8 the site will be accessed via Drew Road or Brockman Road. All entrances to the CSE Facility site parcels are proposed to use local roads with the exception of one parcel south of SR 98 and west of the Mount Signal Drain that will access the site off of SR 98 (**Figure 2.0-17**).

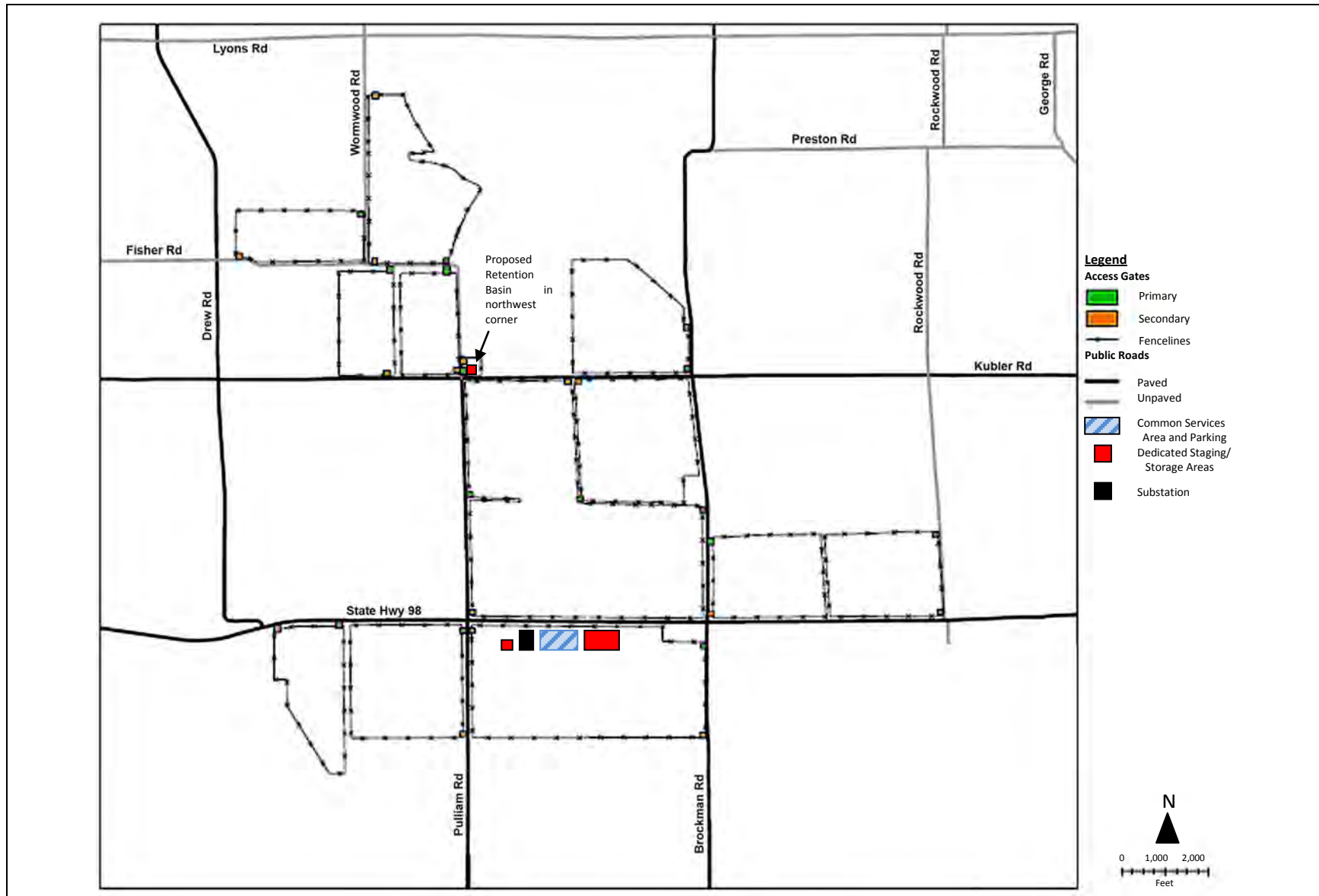
All weather, 24-foot wide, gravel roads will be inside the perimeter of each fenced solar field area. Interior gravel roads 20-feet wide spaced no more than 500-feet apart would align in either a north to south or east to west direction through the solar fields (Note: Interior roads are depicted east to west in the representative block configurations (refer to **Figure 2.0-8** and **Figure 2.0-9**). A minimum of 20-foot wide spacing will be left in the perpendicular direction to the interior roads at a spacing of no more than 500 feet. These 20-foot wide breaks would be native soil unless otherwise shown on the site plan. Graveled areas to support a minimum turning diameter of 60 feet will be at each inverter equipment enclosure/pad area and inside each access gate. Where inverter equipment enclosure/pad areas are adjacent, a single turnaround will be provided. The main access road to the common services area will be 24-feet wide asphalt or concrete.

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Source: CSE, 2011c.

FIGURE 2.0-17  
ACCESS GATES AND STAGING AREAS OVERVIEW MAP

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The Applicant is proposing to construct three new vehicular crossings over the IID canal and drain facilities, and is proposing to widen one existing IID canal crossing. The three new crossings are identified on **Figure 2.0-18** and **Figure 2.0-19**, and the existing canal crossing improvement and widening is shown on **Figure 2.0-20**. The IID has an existing process for requesting, designing and constructing these crossings. The Applicant will work with the IID and other necessary agencies on the design and construction of these crossings.

In accordance with IID design requirements, the new vehicular crossings would be constructed as either bridge (span) or culvert crossings. The crossings will be 24- to 35-feet wide and will vary in length depending on the dimensions of the water feature. The following options are considered for the new bridge crossings: cast-in-place reinforced concrete slab, precast concrete bridge, or prefabricated steel. Culvert crossings will be constructed as either pipe culvert (corrugated or concrete) or box culverts (concrete). The existing canal crossing will be improved to increase its minimum width to 24 feet.

**Fire Protection.** Buildings in the common services areas of the CSE Facility will be designed with fire protection systems based on applicable Imperial County requirements. Systems where pressurized firewater is used will have electric pumps. Portable fire extinguishers of appropriate sizes and types would be throughout the CSE Facility site. Class C (electrical) rated fire extinguishers will be mounted at each inverter.

The PV modules are typically Class C fire-rated and the remainder of the equipment is of nonflammable material (aluminum, steel, and glass). The solar field will be maintained with a minimum of vegetation and other combustible materials. Up to nine, 10,000-gallon firewater tanks will be distributed throughout the solar field (refer to **Figure 2.0-6**). Access roads will provide emergency access throughout the solar field.

**Cathodic Protection Systems and Grounding.** Underground metal structures will have corrosion resistant coatings or cathode protection as necessary, based on soil conditions. The project will be designed with a grounding system providing an adequate path-to-ground to permit the dissipation of current created by lightning and ground faults.

**Auxiliary Electrical System.** Power for CSE Facility auxiliaries will be supplied via step-down transformers at each inverter. Auxiliaries supplied by this power source are small operation and maintenance loads including, but not limited to, the solar field drive motors, inverter monitoring systems, lighting, and heating, ventilating and air conditioning (HVAC) if required. Power for the common service area is expected to be provided by IID from an existing distribution line along Brockman Road. Additionally, the common services area would have a back-up power supply via an auxiliary transformer at the CSE Facility substation.

**Supervisory Control and Data Acquisition (SCADA) Monitoring System.** The SCADA monitoring and control system provides monitoring, alarm, and data storage functions for each of the inverters. Since each inverter operates automatically and independently, no single component failure would cause a plant outage. The monitoring system consists of the following major components: meteorological stations, communication devices, hardware and software to gather information from equipment in each inverter, a website host, a dedicated webpage, and a SCADA server work station/display in the operation and maintenance building.

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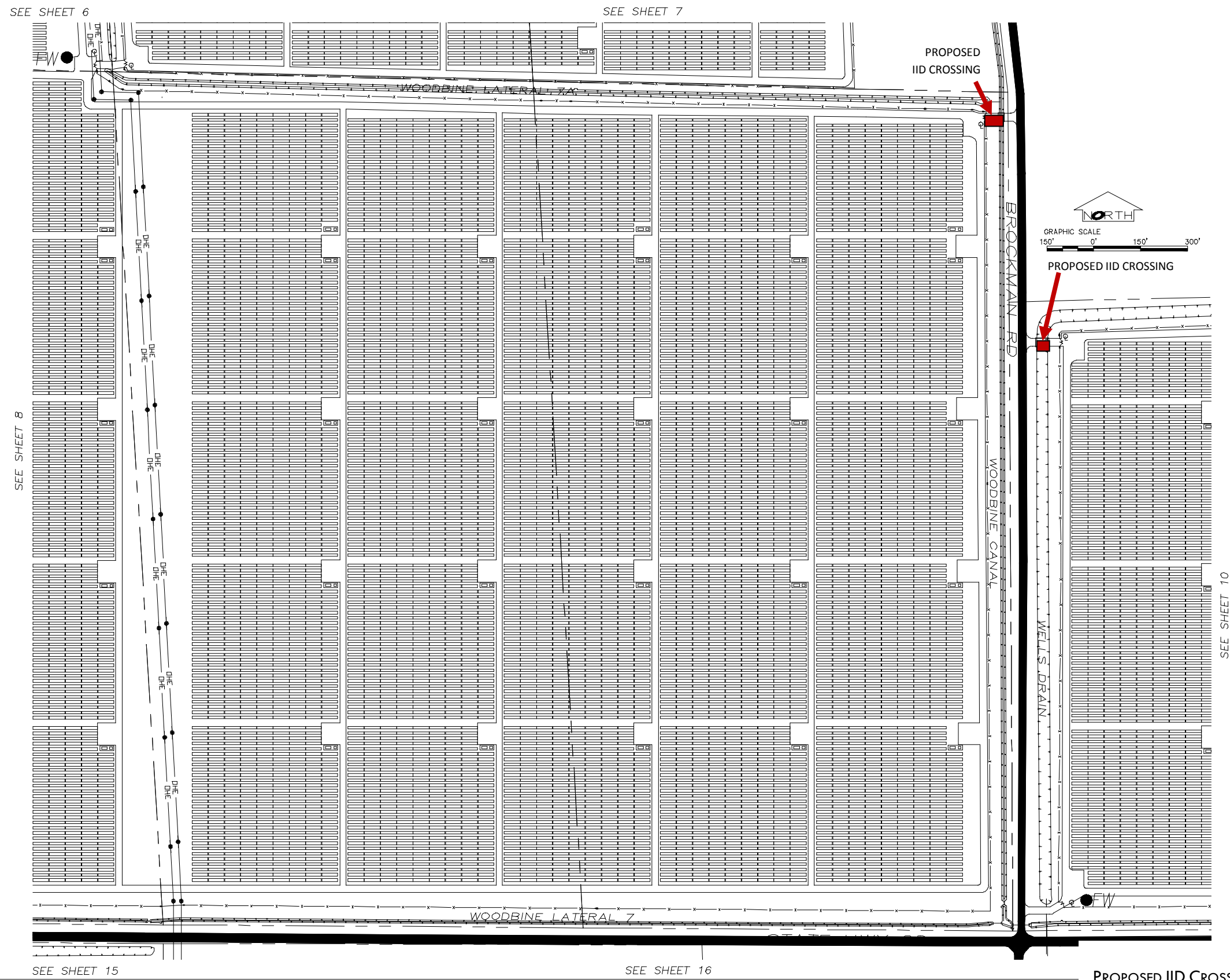


FIGURE 2.0-18  
PROPOSED IID CROSSINGS – WOODBINE CANAL AND WELLS DRAIN

Source: CSE, 2011b.



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FIGURE 2.0-19  
PROPOSED IID CROSSING - CARPENTER DRAIN NO. 1

Source: CSE, 2011b.

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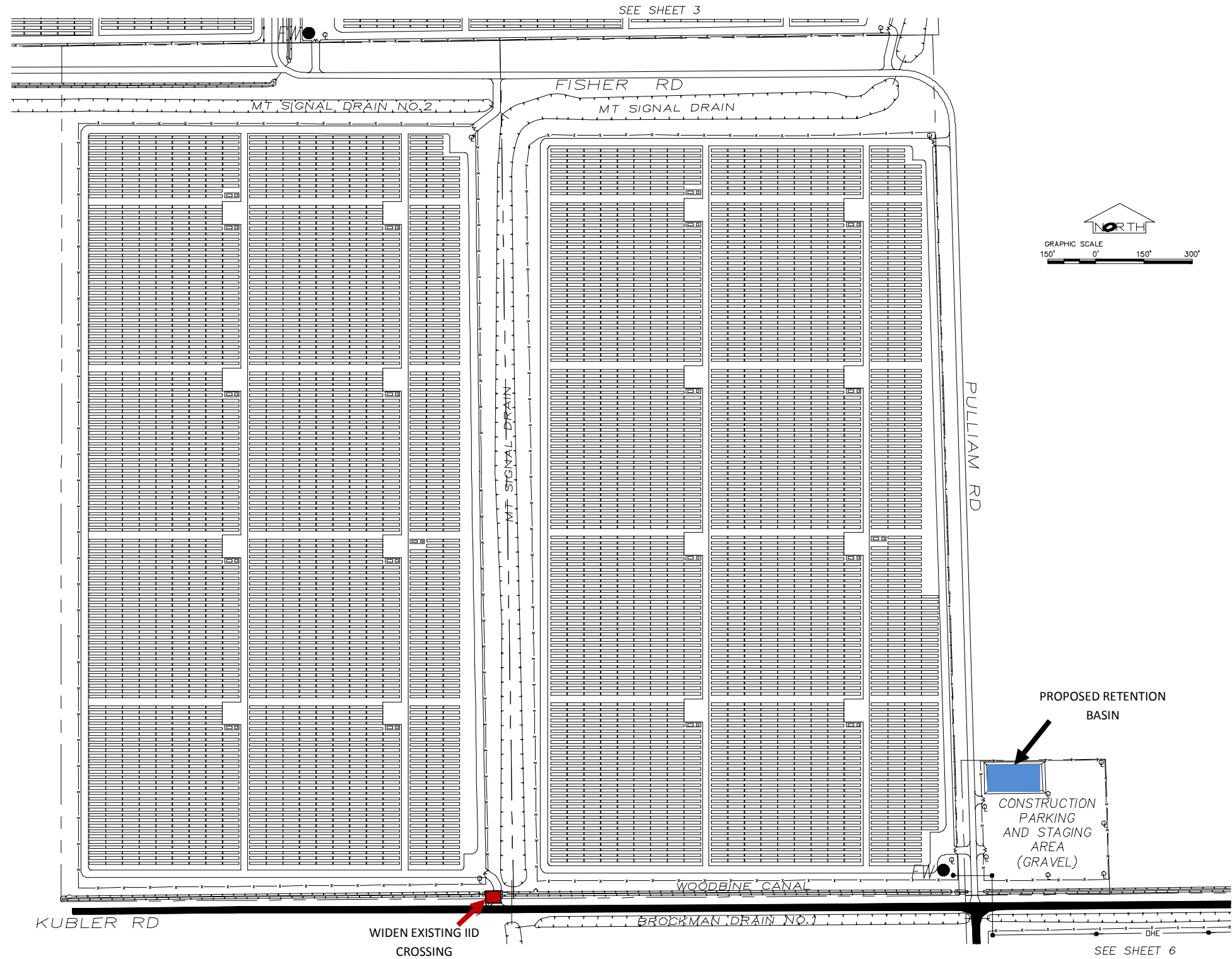


FIGURE 2.0-20  
LOCATION OF WIDENING OF EXISTING IID CROSSING – WOODBINE CANAL

Source: CSE, 2011b.

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**Meteorological Stations.** Meteorological equipment will be used to monitor solar irradiation and weather conditions at the CSE Facility site. The meteorological instruments are typically mounted to a single metal pole approximately 8 to 10 feet above ground level. The stations will be distributed throughout the CSE Facility at an approximate frequency of one station for every one hundred acres. Up to four meteorological stations with an anemometer (a device for measuring wind speed) mounted 10 meters (33 feet) above ground level may be distributed within the CSE Facility to measure wind speeds and direction.

### **Other Site Design Considerations and Features**

**Grading.** The CSE Facility site is comprised of flat, flood-irrigated agricultural fields. Minimal grading is expected due to the topography of the site and the proposed construction methods, which will generally retain the current topographic features. The final grading plan will be based on final project design.

**Excavations.** Excavation will be used in activities such as trenching for underground wiring and cables, for placing electric poles, preparing equipment pads and for common services facilities. The types of excavation needed to accommodate PV structures, if any, is dependent upon the type of panel chosen and the associated mounting foundation. Depth for mounting foundations can vary from 6 to 11 feet. Foundation installation depends on the type of mount as well. I-beam and tube pedestal foundations are driven into the ground. In contrast, concrete encased pedestals involve setting either an I-beam or tube pedestal into a concrete footing approximately 1-foot, 6-inches in diameter which would require excavation to pour the concrete. The three possible mounting configurations and their associated depths are depicted in **Figure 2.0-7**.

**Drainage.** CSE Facility drainage features include existing drainage facilities that are owned and maintained by IID, existing private drainage facilities, and new drainage facilities. Named canals and drains are owned and maintained by IID and would remain in place. Head ditches and tailwater ditches on the facility parcels will be incorporated as part of the facility drainage (if appropriate), removed and filled, or abandoned in place as specified in the final drainage and grading plans to be submitted to Imperial County prior to construction. Existing reinforced concrete pipes connecting to IID drains would be maintained at their current sizes and locations.

The CSE Facility site is comprised of 33 elevated drainage basins. Most of the basins are agricultural fields bordered by an irrigation delivery and drainage system operated and maintained by IID, including canals, drains, dirt access roads, earthen drainage swales. All of the basins have depths ranging between 18 to 30 inches. Each detention basin has capacity to detain its own tributary storm water volume for a 3-inch precipitation event without the use of a runoff coefficient reduction factor. The CSE Facility plans to use the existing agricultural fields as detention facilities since the fields' existing capacity to retain stormwater considerably exceeds the Imperial County detention capacity requirements (Nolte, 2011, p. 9).

All tributary storm drain contributions for each basin area will be managed and conveyed to the existing basin discharge points without altering the pre-development storm water flows. Additional storm-water runoff (resulting from the increase of the CSE Facility impervious ground due to new roads, buildings, inverter enclosures and other equipment pads) would be detained on-site, as required, and dissipate via infiltration into the soils and evaporation to the atmosphere.

Two additional basins will be constructed on the CSE Facility site to address stormwater runoff. A retention basin will be in the northwest corner of the parking/staging area at the northeast quadrant of

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the intersection of Kubler Road and Pulliam Road. The retention basin will be 190-feet wide, 100-feet long and 4-feet deep (refer to **Figure 2.0-20**). The retention basin will be designed consistent with Imperial County standards and drain within 72-hours into the IID drain system. The proposed detention basin located within the common service area will capture storm flows generated by the common services area, parking and staging area. The detention basin is estimated to be approximately 365-feet long, 117-feet wide and 3-feet deep, subject to the final engineering and design of the facilities.

During operation of the project, soil erosion and sedimentation will be controlled in accordance with the Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities (currently Order No. 97-03-DWQ; NPDES No. CAS000001, referred to herein as the “General Industrial Permit”). The General Industrial Permit applies to all new or existing storm water discharges and requires that a Stormwater Pollution Prevention Plan (SWPPP) be prepared, implemented, and maintained to a) identify and evaluate sources of pollutants associated with industrial activities that may affect the quality of storm water discharges; and b) to identify and implement site-specific best management practices (BMPs) to reduce or prevent pollutants associated with industrial activities in storm water discharges. BMPs expected to be included in the SWPPP are generally categorized as non-structural BMPs (e.g., activity schedules, prohibitions of practices, maintenance procedures, inspection checklists, etc.) or as structural BMPs (e.g., use of pervious surfaces, containment for chemical storage, retention/detention basins, etc.).

### D. Construction Process for the CSE Facility

#### **Construction Sequence and Phasing**

The CSE Facility will be built in two phases. Phase I of the project (approximately 175-MW) would be on approximately 1,350 acres of the CSE Facility site and is planned to be constructed over 22 to 28 months. Construction of the initial phase is estimated to begin in the fourth quarter of 2011 or first quarter 2012. However, the actual start of construction will be determined based on the receipt of all pre-construction permits and approvals and securing financing for the project.

Construction of the PV Arrays will generally be grouped and undertaken based on discreet parcel boundaries (some parcels may be grouped together if they share a common perimeter fence). The construction process for the PV Arrays is generally as follows: (i) site preparation, (ii) installation of piers for PV racking and inverter pads, (iii) installation of racks, inverters, transformers and trenching for underground wires and cables, (iv) installation of modules, DC wiring, AC wiring installation, and (v) energization, testing and punch list items. Site preparation will include activities such as surveying, fence installation, roads, grading and stormwater controls. Punch list items typically include work such as site clean-up, completion of any remaining auxiliary systems in the PV Array field, and repair of any defective equipment.

Before any of the PV Arrays can be energized and tested, the CSE Facility substation, Gen-tie Line and portions of the AC collector system must be completed. As such these project facilities will start construction in parallel with construction of the first PV Array field. Additionally, the construction staging and parking areas, construction trailers and temporary electric service for the construction activities will all be initiated at the start of construction. After construction facilities have been installed, work will begin on the common service area facilities. The Applicant expects that as preparation work is completed on one area of the site, construction crews would move to the next area such that there will be multiple PV Array areas under construction simultaneously. The Applicant expects that groups of PV arrays, nominally 10- to 15-MW at a time, would enter testing and begin operations as they are

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completed. Once construction begins on Phase I, construction activities will continue until Phase I reaches its designed build-out.

The CSE Facility includes acreage for expansion beyond the initial phase of 175-MW. Approximately 100-MW would be added at a later date. Expansion of the generating capacity of the CSE Facility will predominantly involve incremental construction of additional PV Arrays, additional AC collector systems, an additional high-voltage transformer and associated equipment in the CSE Facility substation, and auxiliary facilities including roads, fencing, and firewater tanks. The common services area, water treatment system, and Gen-tie Line will be designed and sized to accommodate Phase II but will be constructed as part of Phase I. Phase II is a separate construction activity estimated to last 15 to 18 months. A separate construction mobilization is expected for Phase II (CSE, 2011c). The sequencing of Phase II would be similar to that of Phase I described above.

### **Construction Access**

Access to the project will be provided from US Interstate 8 (I-8) via Drew Road and Brockman Road, SR 98 and local roads. All entrances to the CSE Facility site parcels are proposed to use local roads, with one parcel (APN 052-190-007, refer to **Figure 2.0-4** and **Figure 2.0-17**) having direct access off of SR 98. Brockman Road south of SR 98 will access the CSE Facility substation and the common services areas. **Figure 2.0-17** shows the gates that would access the CSE Facility site. Construction traffic is anticipated to enter and exit via the primary and secondary gates to each PV area.

### **Construction Staging Areas**

Two dedicated areas would be graveled for multi-use areas to support construction. The uses of these areas will include construction trailers, construction employee parking, equipment and material storage, and construction staging. These two multi-use areas include approximately 4.7 acres east of the common services area and approximately 3.5 acres at the northeast corner of the intersection of Kubler Road and Pulliam Road (refer to **Figure 2.0-17**). A third area of approximately 1.5 acres west of the CSE Facility substation would be used for construction staging and assembly for the substation and Gen-tie Line (refer to **Figure 2.0-17**). Materials and equipment ready to be installed will be routed and stored adjacent to their final locations prior to installation.

### **Construction Workforce**

The construction workforce will vary over the 22 to 28 month construction period. Employment is expected to reach approximately 100 workers by month 3, and then increase to a peak of approximately 360 workers by month 6. The workforce will decrease as the CSE Facility substation, Gen-tie Line, and common services area facilities are completed. Around month 9, the workforce is expected to average approximately 250 workers and continue to the latter stages of construction. The workforce will decline during the last four months of construction.

For the future expansion phase, the workforce is expected to ramp up to approximately 250 workers by month 4 and maintain that construction employment through latter stages of construction. The construction workforce would decline during the last four months of construction.

The onsite construction workforce would consist of laborers, craftspeople, supervisory personnel, and support personnel. Given the long construction duration, approximately 90% of the construction workforce is assumed to come from a combination of existing residents of the Imperial Valley and



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construction workers from outside areas that temporarily reside in the Imperial Valley during construction.

Construction crews are expected to be present no more than six days per week, and typically work between the hours of 7 AM and 5 PM. During summer months, a split schedule may be developed to minimize worker exposure to midday heat; however, local noise ordinances and other applicable policies would be considered in setting such a schedule.

### **Construction Parking**

Construction workers will be directed to park in one of the two dedicated multi-use areas. One area is located in the northeast corner of the Pulliam Road/Kubler Road intersection. The other is south of SR 98 west of Brockman Road (refer to **Figure 2.0-17**). From these locations workers will be transported by construction vehicles (such as sport utility vehicles and shuttle bus), to active construction areas. Alternatively, workers may walk to the active construction area when the construction area is near the parking area.

### **Deliveries**

Deliveries of equipment and materials are expected to occur during normal work hours and may occur at any time throughout the work day. Materials and equipment that will be used in real-time (e.g. gravel, concrete) or be assembled and installed within approximately the next week (e.g. PV modules and racking) will be delivered and unloaded within the PV area where the equipment and material are to be used. Equipment intended to be stored longer than approximately one week will be delivered to and stored at one of the three dedicated construction staging areas. At the peak of construction, approximately 90 deliveries per day are estimated to be made to the various construction areas. On average, 50 deliveries per day are expected during construction. Deliveries will be made via dump truck, box truck, semi tractor, or flatbed truck.

### **Air Quality & Dust Suppression**

During construction of the CSE Facility, surface disturbance has the potential to create fugitive particulate dust. Adherence to applicable Imperial County Air Pollution Control District (ICAPCD) Rules and implementation of CSE's dust control plan will minimize dust emissions. Measures to control dust will be implemented on all roads as determined by and in accordance with the applicable dust control plan requirements. Mobile and stationary internal combustion engines are anticipated to result in low levels of criteria pollutant air emissions. Water usage for dust control is estimated at approximately 12 acre-feet per month during the construction process.

### **Stormwater**

During construction of the project, soil erosion and sedimentation will be controlled in accordance with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (currently Order No. 2010-0014-DWQ; NPDES No. CAS000002, herein referred to as the "Construction General Permit"). The Construction General Permit regulates discharges of pollutants in storm water associated with construction activity (storm water discharges) from construction sites that disturb one or more acres of land and requires that a Storm Water Pollution Prevention Plan (SWPPP) be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP).

### E. Operations and Maintenance of CSE Facility

The CSE Facility will operate seven days a week, every day of the year, generating electricity during daylight hours.

#### **Workforce**

During operation, the project will employ an estimated five to seven full-time employees. Facility staff is expected to be on-site predominantly during daylight hours. Additional personnel would work at the site intermittently to conduct preventative maintenance, wash panels and perform repairs. Permanent operational staffing is not anticipated to increase in association with future expansion of power generating capabilities.

#### **Water Treatment and Storage**

The project will require potable and industrial supply water. Industrial water will be supplied to the project under an industrial service water agreement with the IID. The CSE Facility may process industrial supply water on-site for use in washing the PV panels. The water treatment system may be either a dedicated on-site system or a trailer-mounted system. The water will be treated to remove dissolved solids, likely using a combination of reverse osmosis and deionization. Regeneration of ion-exchange resins, if used, will be performed off-site. Water treatment byproducts such as reverse osmosis brine and demineralized rinse water will either be captured and trucked offsite or be sent to onsite evaporation ponds.

Demineralized water will be used on an as-needed basis to remove dust and clean other light-blocking contaminants from the PV modules.

A 200,000 gallon raw water storage tank and a 200,000 gallon treated water storage tank will be at the common services area to protect against interruptions in water service and to provide storage capacity for fire suppression. Additionally up to nine, 10,000-gallon firewater tanks will be distributed throughout the solar field (**Figure 2.0-6**).

Potable water supply would be provided from a bottled water or similar water delivery service.

#### **Water and Panel Washing**

PV panels may require washing on a periodic basis. In general, washing activities are expected to be contracted and not performed by project staff. Demineralized water from the on-site CSE Facility water treatment system, or water that is treated elsewhere and trucked to the site, will be used to remove dust and clean other light-blocking contaminants from the PV modules. Panel washing is expected to require two water tank vehicles and spraying equipment operated by on-ground personnel. Washing the PV panels is estimated to require additional staffing of four to six employees and take approximately three to four weeks to complete. Washing is expected to require approximately 18 acre-feet of water per year. The frequency of panel washing would be based on site-specific conditions such as rate of dust accumulation, frequency of rainfall, and operational benefit.

#### **Other Maintenance Activities**

The CSE Facility will require periodic, comprehensive maintenance of certain components, such as semi-annual testing and servicing of the inverters. Comprehensive maintenance activities are expected to require supplemental contracted workers. Testing and servicing typically requires two to five contract

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employees and lasts two or three weeks. In the event of PV module breakage or failure, new panels will be delivered to the site, and project staff would change out the panels. Any panels removed will be recycled or disposed of in accordance with all local, state and federal laws.

Maintenance of on-site drainages and roads will require occasional use of equipment such as graders, dump trucks and tractors. Third party contractors are expected to perform any comprehensive maintenance or improvements to site roads or drainages. The Gen-tie Line will be designed such that operation and maintenance requirements are minimal. Typical operation and maintenance tasks will include periodic (e.g., annual) inspections of the equipment and access roads, with repairs made as necessary.

### **Noise**

The primary sources of noise associated with the project are the inverters and transformers. Intermittent noise sources may include PV module tracker drive motors and water supply pumps used occasionally to fill fire-suppression water storage tanks and water storage tanks at the common service area. Pumps and mechanical equipment associated with the module wash water treatment facility will be enclosed in a building. Equipment purchased for the CSE Facility will be specified for equivalent “A” weighted sound pressure levels not to exceed 85 dBA at 3 feet per Occupational Health and Safety Administration (OSHA) requirements. If the purchased equipment has sound levels that exceed OSHA D-4 permissible noise limits (CFR 29, 1910.95) administrative or engineering controls will be used, such as personal protection equipment.

### **Air Quality**

Normal operations of project will not result in any direct air emissions from the electricity production process. Daily air pollutant emission sources are anticipated to be limited to vehicular traffic associated with project maintenance and operation activities.

### **Weed and Vegetation Management**

Weed management on the CSE Facility site will most likely involve use of herbicides. The Applicant would work with the County of Imperial Agricultural Commissioner to develop a weed control plan for the site.

### **Waste Management**

All waste, including trash and litter, garbage, and other solid waste will be removed to a disposal facility authorized to accept such materials. Commercial garbage collection and hauling will be contracted to remove waste and recyclable materials.

### **Hazardous Material Handling and Storage**

Small quantities of hazardous materials will be used and stored on-site for miscellaneous, general maintenance activities. Hazardous materials are expected to include consumer-sized containers of oils, grease, paints and solvents. Small quantities of diesel fuel and gasoline may also be stored on-site for use in off-road service vehicles and generators. Dielectric insulating oil will be used in some electrical equipment, such as the on-site transformer(s). Oil-containing equipment will include a spill containment system designed to contain oil in the event of a leak. If diesel-fueled back-up pumps are required for fire protection, appropriate secondary containment will be provided for the diesel fuel tank. If

pre-treatment, such as softening, is necessary for on-site water treatment, water treatment chemicals needed for that process would be used and stored at the CSE Facility (CSE, 2011d).

The Applicant intends to prepare a Hazardous Materials Management Plan (HMMP) or other similar plans, as applicable, prior to using or storing hazardous materials on the project site. Hazardous materials will be stored in appropriate storage containers in the maintenance building, garage, and water treatment building, as needed to support facility operations. All hazardous materials will be managed in compliance with applicable laws and regulations regarding transport, use, disposal and storage. All industrial wastes generated during construction, operation, and maintenance of the project will be disposed of in an approved location(s) (e.g., an approved landfill).

### F. Decommissioning and Reclamation of CSE Facility and Site

#### **Site Decommissioning**

The generating facility's useful operating life, with appropriate maintenance, repair and component replacements, is expected to be 30+ years. When the project reaches the end of its operational life, the components will be decommissioned and deconstructed. It is expected that many components will be suitable for recycling or reuse and the facility decommissioning will be designed to optimize such salvage as circumstances allow and in compliance with all local, state and federal regulations as they exist at the time of decommissioning. The decommissioning of the CSE Facility is expected to generally include the following steps:

- The CSE Facility will be electrically disconnected from the power grid.
- Any portion(s) of the Gen-tie Line that may have become an integral part of the utility power grid will remain in operations.
- Electrical equipment such as inverters, transformers, and PV panels will be disconnected and removed.
- Panel racks and similar equipment and structures will be mechanically dismantled and removed.
- Electrical and communications wiring will be removed from underground trenches/conduits and aboveground runs. Poles and towers used to support aboveground wires will be removed. Concrete foundations, if used for poles and towers, will be removed to a depth of at least 4-feet below ground level and demolished.
- Driven piles will be removed from the ground.
- Buildings in the common service area will be evaluated for agricultural and commercial use. If the buildings are not suitable for these uses then furniture and fixtures would be removed and the buildings would be dismantled and removed.
- Water tanks will be removed intact for reuse or demolished and recycled.
- The water treatment evaporation ponds (if constructed) will be cleaned and the accumulated solids properly characterized and disposed. The pond liners will be removed and the concrete foundations demolished and removed.
- Other concrete foundations, such as those for buildings and inverter pads, will be demolished and removed or used onsite for fill as needed.

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- Fencing will be removed.
- Gravel roads will be removed and the material either used on site for fill or removed.
- Excavation areas (e.g. road and foundation removal) will be backfilled and restored to an appropriate contour.
- Commercially reasonable efforts will be used to recycle or reuse materials from the decommissioning; all other materials will be disposed of at a licensed facility.

### **Agricultural Reclamation Plan**

The Applicant intends to submit an Agricultural Reclamation Plan to Imperial County Department of Planning and Development Services for review and approval prior to issuance of building permits. The Agricultural Reclamation Plan will contain detailed procedures for returning the CSE Facility site to a condition to support agricultural production at the end of the useful life or the expiration of the Conditional Use Permit. The Agricultural Reclamation Plan will incorporate the provisions outlined in the Site Decommissioning above and also include the following minimum performance standards:

- Removal of excess soil rock and construction debris after site decommissioning.
- Install, repair, and reconnect irrigation tile lines, as needed.
- Install, repair, and restore a functioning irrigation system.
- Ensure proper surface drainage of the property.
- Alleviate soil compaction from operations and decommissioning through deep tilling or other methods.
- Ensure that sufficient funds are available, either through the scrap value of the CSE Facility, by posting a reclamation bond (or similar financial instrument), or a combination thereof during the life of the project.

### **2.1.5.3 GEN-TIE LINE CHARACTERISTICS**

#### **A. Existing Uses and Features**

The Gen-tie Line transects three distinct property segments. The Gen-tie Line will originate at the CSE Facility Substation, immediately south of SR 98 and approximately one-half mile east of Pulliam Road, and extend approximately 1.5 miles west through the CSE Facility site. From the western boundary of the CSE Facility site, the Gen-tie Line will extend across the West Side Main Canal and continue approximately 1.25 miles through private lands south of SR 98. The remaining approximately 4.25 miles extends through lands managed by the BLM, first west then north, to connect with the Imperial Valley Substation (refer to **Figure 2.0-2**, **Figure 2.0-3A** and **Figure 2.0-3B**).

The Applicant controls the portion of the CSE Facility site impacted by the Gen-tie Line through fee ownership by an affiliate and has secured an option-to-purchase agreement for the easement required on private property west of the CSE Facility site. The width of the permanent easement on private land will be 100 feet with an additional 50-foot wide temporary easement available for construction. In addition, the Applicant has submitted a ROW application to the BLM for the segment approximately 4.25 miles to the Imperial Valley Substation. For most of its length, the Gen-tie Line is proposed as a corridor adjacent to existing 230-kV electric lines in order to minimize visual disturbance; to minimize

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surface disturbance; and to minimize impacts to environmental resources to the extent practicable by relying on existing access roads.

The proposed permanent BLM ROW width is 125 feet, which maintains sufficient separation between the Gen-tie Line and other infrastructure in the area located on BLM land (e.g., existing high-voltage transmission lines). **Table 2.0-2** identifies the privately owned parcels associated with the Gen-tie Line.

**TABLE 2.0-2**  
**PRIVATELY OWNED PARCELS – GEN-TIE LINE**

Assessor's Parcel Number	Acreage**	Nearest Cross Street/Intersection
052-190-009*	160.0	SR 98 and Pulliam Road, Calexico, CA
052-190-008*	160.0	SR 98 and Pulliam Road, Calexico, CA
052-190-007*	96.81	SR 98 and Westside Main Canal, Calexico, CA
052-190-001	100-foot wide easement	SR 98 and Mount Signal Road, Calexico, CA
052-190-002	100-foot wide easement	SR 98 and Mount Signal Road, Calexico, CA
052-190-006	100-foot wide easement	SR 98 and Westside Main Canal, Calexico, CA

Source: CSE, 2011a.

\*Denotes parcels part of the CSE Facility Site

\*\* Acreage values provided by Imperial County Assessor's Office

All of the private parcels crossed by the Gen-tie Line are agriculture lands. The elevations on these parcels range from mean sea level on the western-most parcel to 18-feet below mean sea level on the eastern parcel near the CSE Facility substation (GS Lyon, 2011b). The Gen-tie Line on private lands will cross over Carpenter Drain No. 1, Pulliam Road, Mount Signal Drain, Wormwood Canal, West Side Main Canal, and Mount Signal Road.

Lands managed by the BLM through which the Gen-tie Line will extend are generally flat, native Sonoran Desert vegetation within the Yuha Basin. The approximate elevations range from mean sea level to 30 feet above mean sea level. Three existing sets of towers in the vicinity carry five 230-kV electric lines from the International Boundary north to the Imperial Valley substation which is also on BLM land. An access road parallels the existing three sets of towers. The Gen-tie Line will parallel the existing 230-kV towers from approximately one-quarter of a mile south of SR 98, northward to the Imperial Valley Substation. The Gen-tie Line will span SR 98 with an overhead crossing that will be subject to terms and conditions of an encroachment permit to be issued by Caltrans. A sixth existing 230-kV line enters the Imperial Valley substation from the north and is owned by the Imperial Irrigation District (IID).

### B. General Plan and Zoning Designations

The Imperial County Land Use Plan designates all of the private lands crossed by the Gen-tie Line as "Agriculture." Agricultural crop production could continue under the Gen-tie Line.

Private lands proposed for the Gen-tie Line are zoned as A-2 - General Agriculture, and S-1 – Open Space/Recreation. Facilities for the transmission of electrical energy are allowed as conditional uses in Agricultural and Open Space/Recreational zones. In keeping with the provisions of the zoning designations, the Applicant is seeking a Conditional Use Permit (CUP).

## 2.0 PROPOSED ACTION AND ALTERNATIVES

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For the portion on BLM land, the Gen-tie Line is entirely within California Desert Conservation Area (CDCA) Plan Corridor N (or Utility Corridor N) which extends north from the International Boundary adjacent to the west side of the IID Westside Main Canal to the north side of I-8 and west to the Imperial County line (**Figure 2.0-4** and **Figure 2.0-21**). Additionally, a portion of the Gen-tie Line on BLM land is within the West-wide Energy Corridor Segment 115-238, which is designated as a multi-modal transmission corridor (DOI/BLM, 2009). The CDCA Plan and designated corridors are discussed extensively in Sections 3.1 and 4.1, Land Use and Special Designations.

### C. Gen-tie Line Design

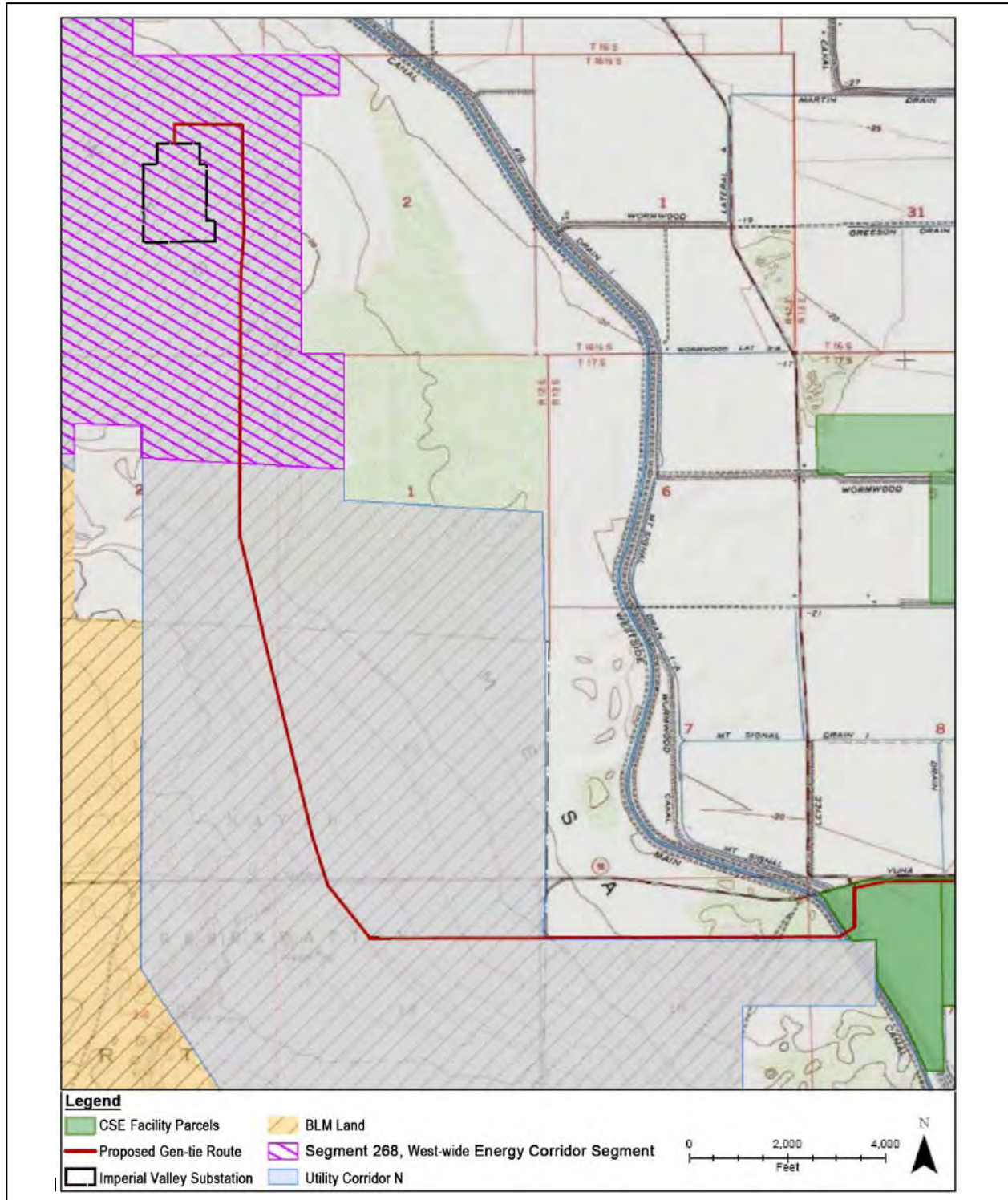
The Gen-tie Line consists of tower structures with foundations, three-phase electric conductors, shield wires, grounding rods, and other associated hardware.

**Structures.** An estimated 44 towers will be installed for the Gen-tie Line. This includes ten towers on the CSE Facility site and seven through private property for which the Applicant will purchase an easement. An estimated 27 towers will be on BLM land (**Figure 2.0-22** through **Figure 2.0-25**). The Gen-tie Line towers will be single-circuit or double-circuit structures and selected from the following available structure type options: steel lattice tower, single-pole (tubular steel, concrete, or a combination of the two) and three-pole tubular steel. If selected, single-pole and/or three-pole angle structures will be self-supporting or guyed. Examples of the tower type options are shown in **Figure 2.0-26** through **Figure 2.0-33**. Tower structure widths vary by type (single circuit or double, lattice or tubular steel). For tubular structures, typical overall structure widths are approximately 10 feet for single circuit and approximately 20 feet for double-circuit. Lattice towers vary based on the individual tower design but generally range from approximately 25 to 40 feet in width. Topography and safety requirements for conductor clearances will determine the exact height of each Gen-tie Line tower. Structures on private land will range from approximately 100 to 130 feet above ground and will be spaced typically 700 to 1,100 feet apart. Structures on BLM land will range in height from approximately 100 to 150 feet above ground and spaced approximately 1,000 to 1,200 feet apart. Towers on BLM land have the potential to be taller than those on private land to match the spacing of existing adjacent towers. Two structures will support the Gen-tie Line crossing the existing 500-kV line. At these points, the Gen-tie Line will undercross the Southwest Power Line (SWPL) using either a three-pole dead-end (**Figure 2.0-29**) or H-frame structure (**Figure 2.0-30**). The Applicant anticipates an overhead crossing of the existing IID-owned, wooden-pole, 230-kV line that extends north out of the Imperial Valley Substation. This design is feasible with the Applicant's proposed tubular steel or lattice steel structures, without constructing any special crossing structures. This crossing will require an encroachment permit from the IID.

**Conductors.** The proposed 230-kV electric line will consist of three phases, with a single conductor per phase. If double-circuit structures are installed, each structure would support up to six conductors, with a single conductor per phase. Each conductor will be aluminum conductor steel reinforced (ACSR)-Cardinal Single Braid. Minimum conductor height above the ground for the 230-kV line will be 31 feet (based on Government Order GO90 standards). (Note: If Alternative 3 is selected, the conductors are anticipated to be specified as two-bundle aluminum conductor, steel supported [ACSS] conductors.)

**Grounding.** CSE will install shield wires on the tower peaks and grounds rods next to the tower structure foundations to protect the conductors from lightning strikes. The shield wires may contain optical fibers for relay and communications.

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Source: CSE, 2011e.

FIGURE 2.0-21  
PROJECT LOCATION WITH RESPECT TO CDCA CORRIDOR N



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FIGURE 2.0-22  
GEN-TIE LINE ALIGNMENT – TOWERS 1 - 12

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Legend			
Gen-tie Line Structures	<b>Construction Areas</b>	<b>Access Roads</b>	<b>Transmission</b>
Gen-tie Centerline	Tower Construction Pad	Use Existing	Existing 500 kV line
Permanent ROW (125')	Pulling & Tensioning Site	New Bladed Road	Existing 230-kV line
	Wire Splicing Sites	Temporary Bladed Road	X Existing Structures

FIGURE 2.0-23  
GEN-TIE LINE ALIGNMENT – TOWERS 12 - 17

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FIGURE 2.0-24  
GEN-TIE LINE ALIGNMENT – TOWERS 17 - 22

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No Scale

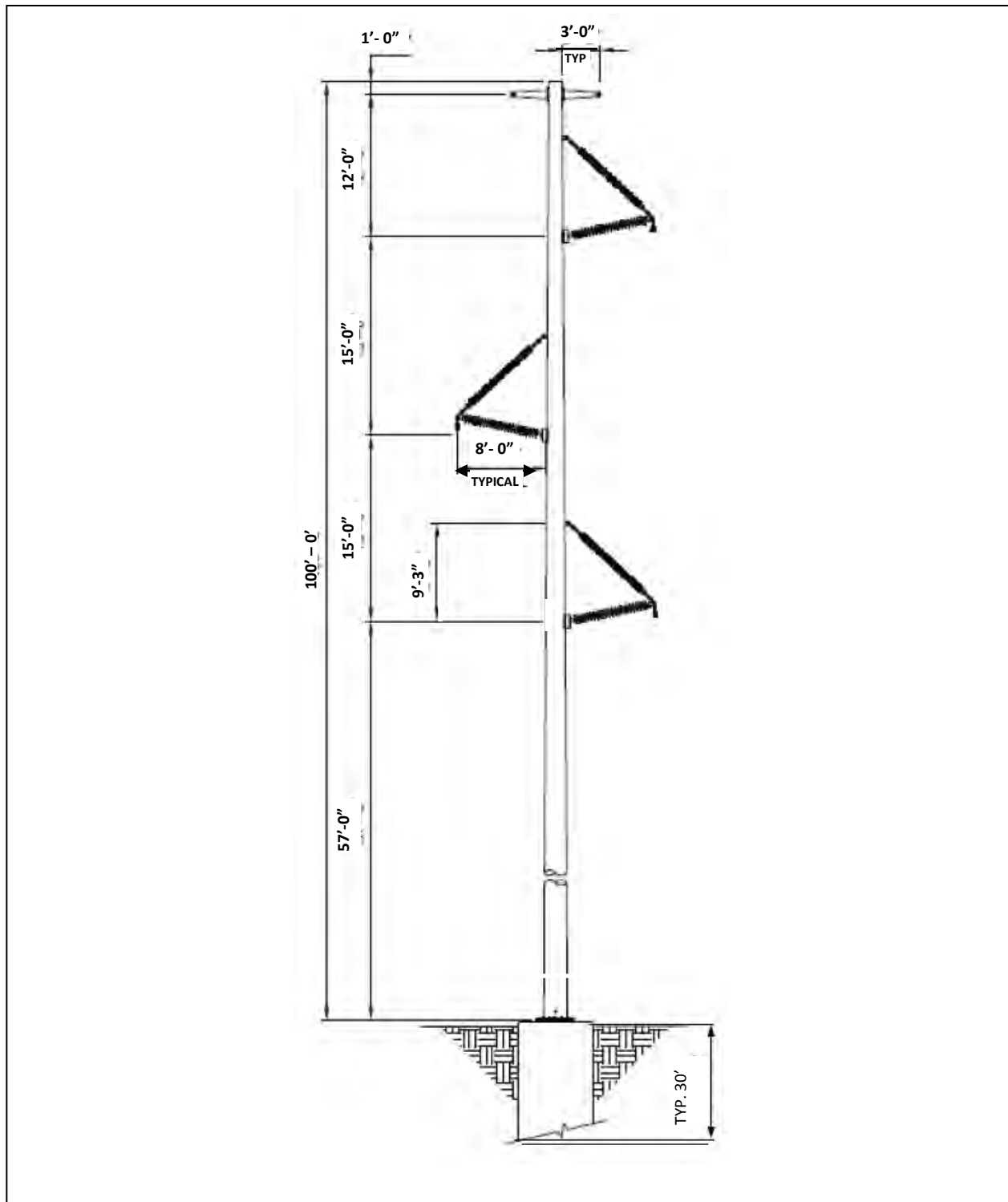
Legend			
Gen-tie Line Structures	Construction Areas	Access Roads	Transmission
Gen-tie Centerline	Tower Construction Pad	Use Existing	Existing 500 kV line
Permanent ROW (125')	Pulling & Tensioning Site	New Bladed Road	Existing 230-kV line
	Temp. Guard Structure	Temporary Bladed Road	X Existing Structures

FIGURE 2.0-25  
GEN-TIE LINE ALIGNMENT – TOWERS 22 - 27



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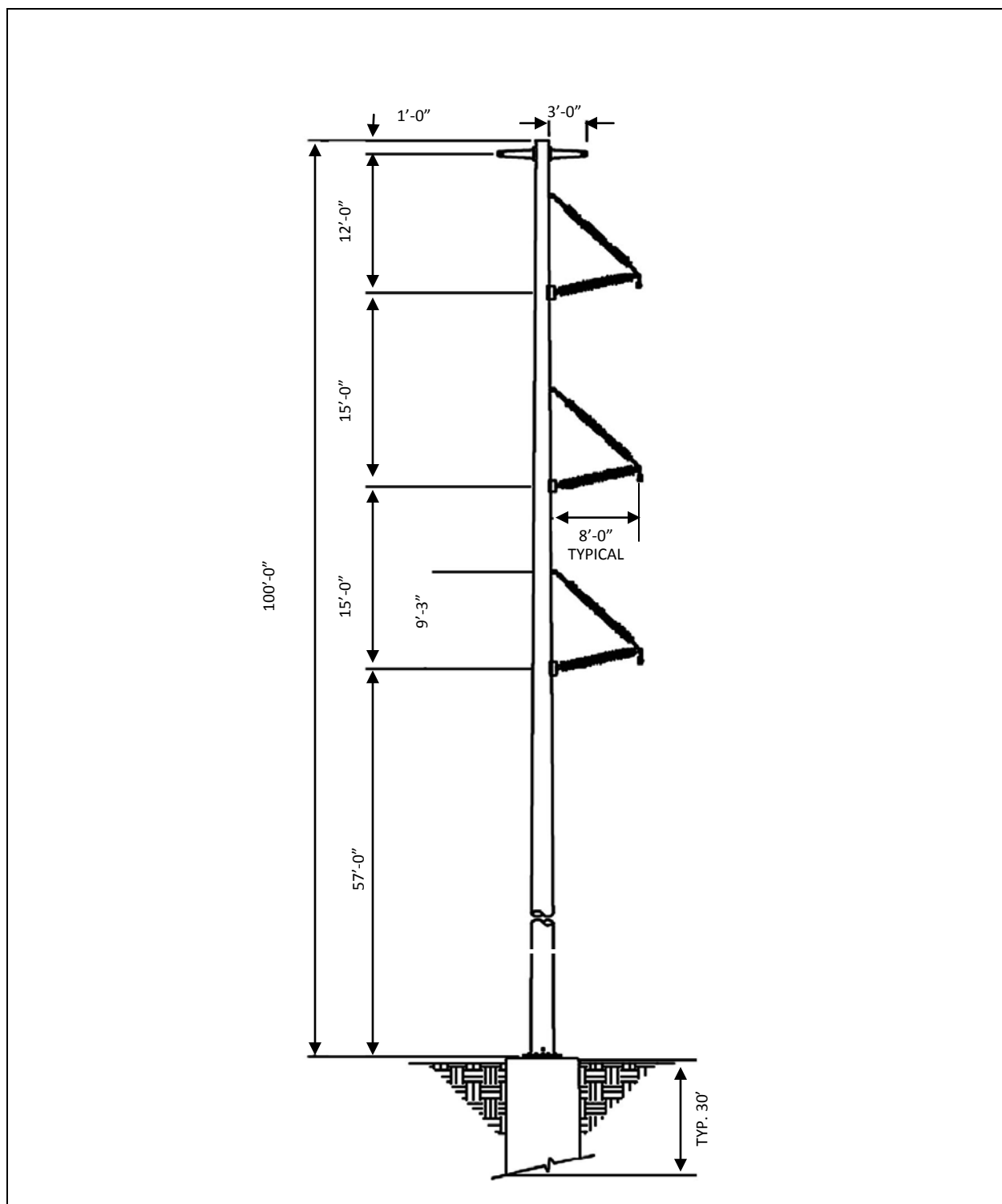
Source: CSE, 2011e.

FIGURE 2.0-26  
TYPICAL SINGLE POLE STRUCTURE – SINGLE CIRCUIT (DELTA)

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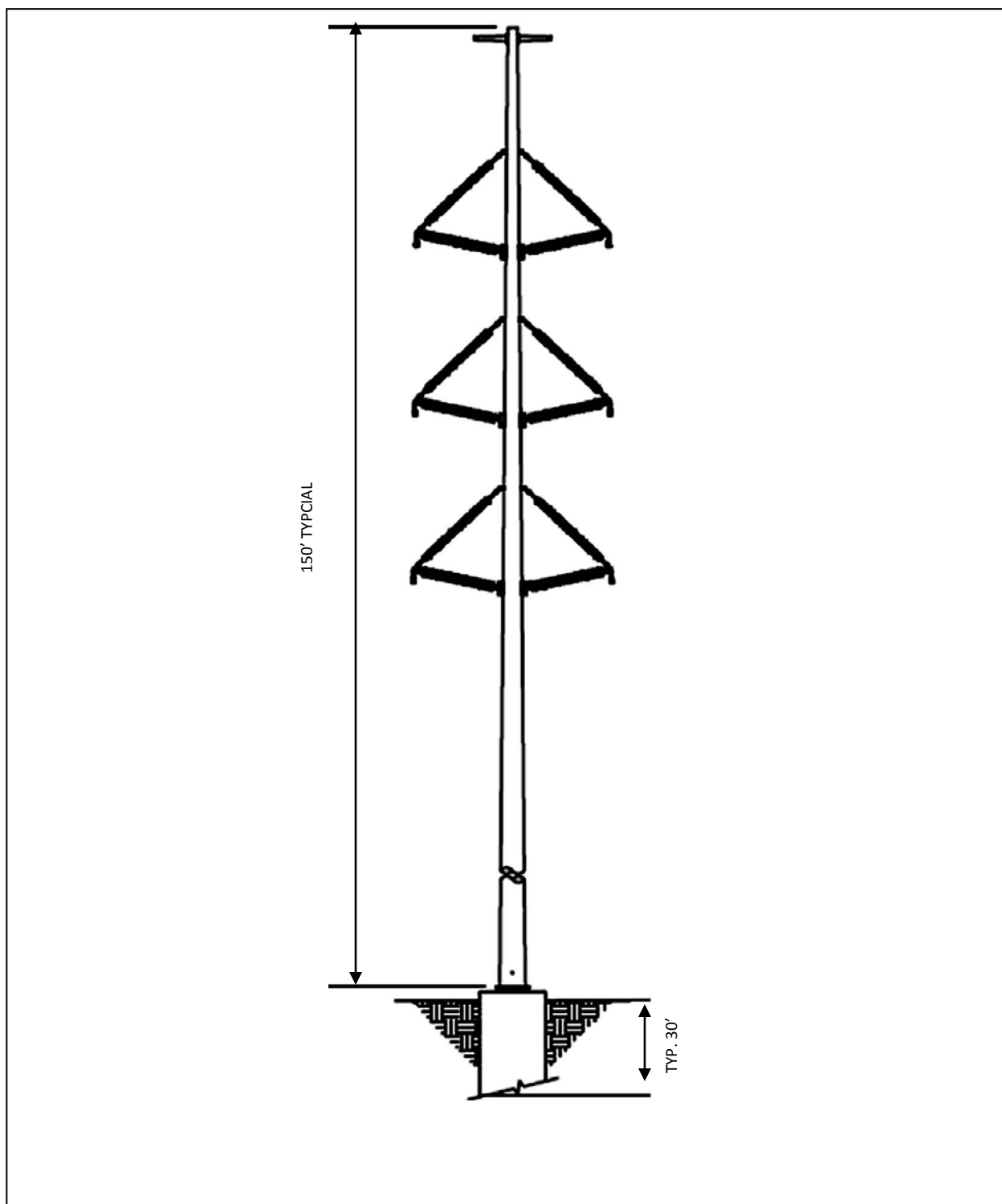
Source: CSE, 2011e.

FIGURE 2.0-27  
TYPICAL SINGLE-POLE STRUCTURE - SINGLE-CIRCUIT (PHASE OVER PHASE)

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Source: CSE, 2011e.

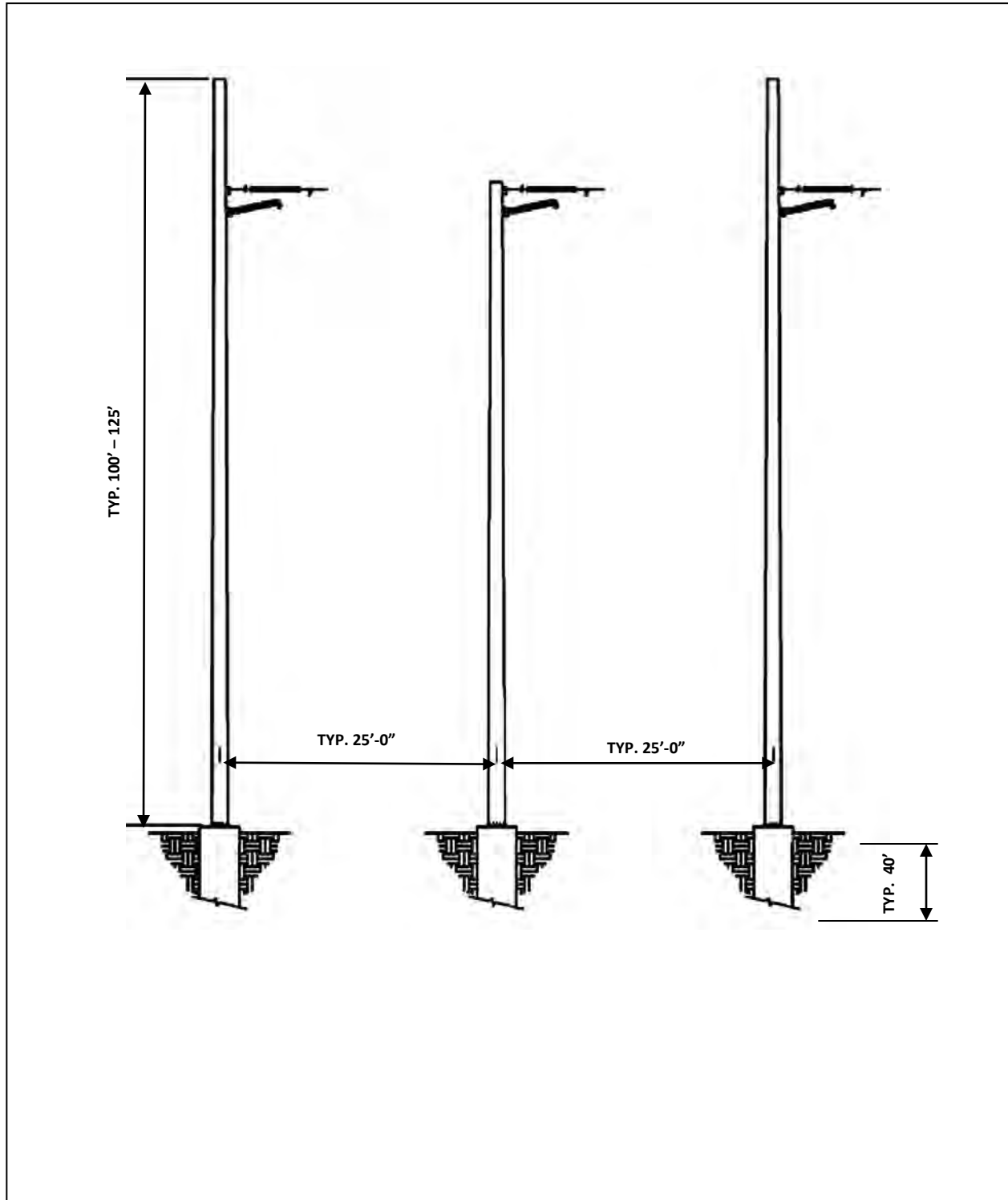
FIGURE 2.0-28  
TYPICAL SINGLE-POLE STRUCTURE - DOUBLE-CIRCUIT (SUSPENSION/BRACED)

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Source: CSE, 2011e.

FIGURE 2.0-29  
TYPICAL 3-POLE DEAD-END STRUCTURE

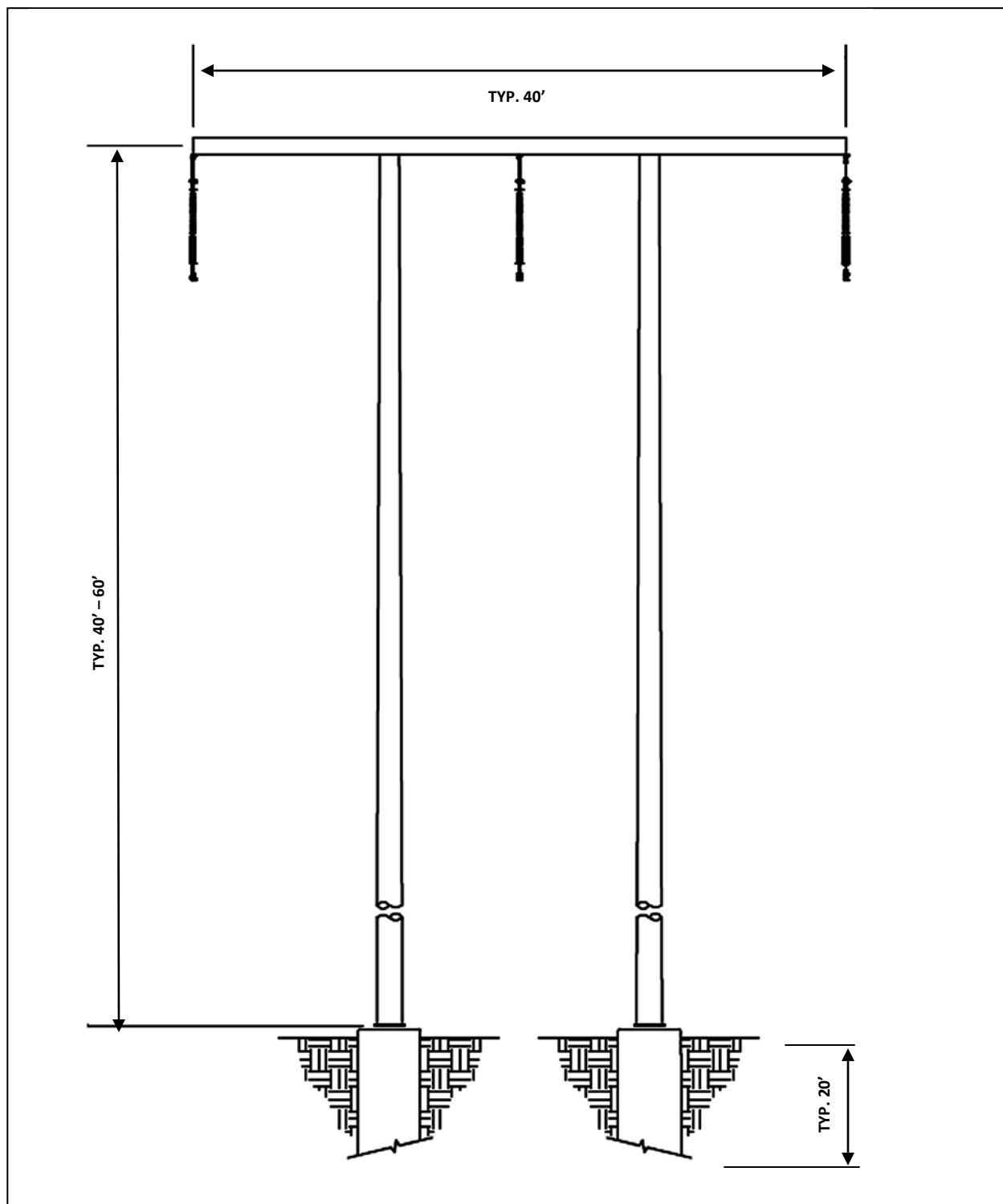


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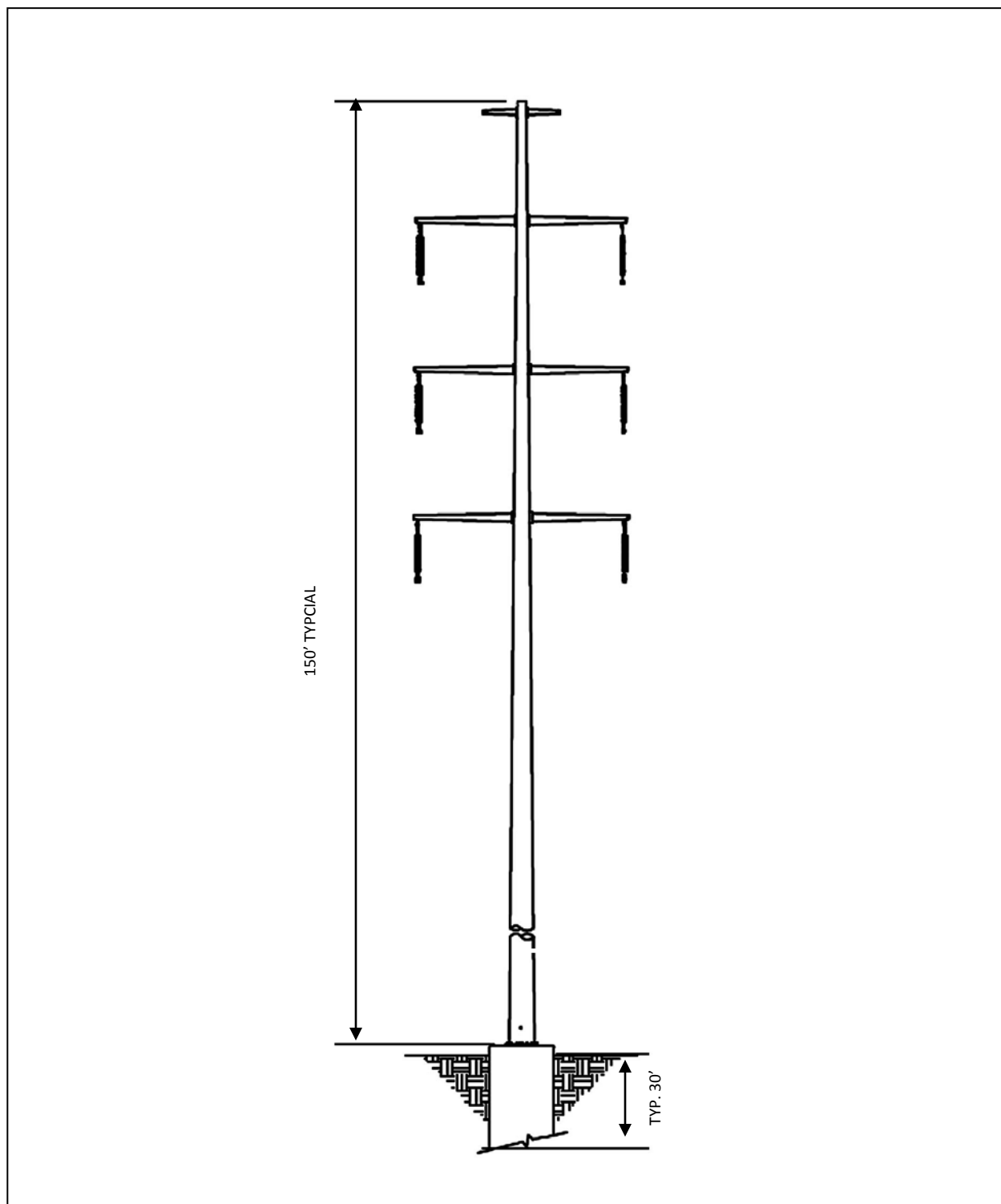
Source: CSE, 2011e.

FIGURE 2.0-30  
TYPICAL H-FRAME UNDERCROSSING STRUCTURE

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Source: CSE, 2011e.

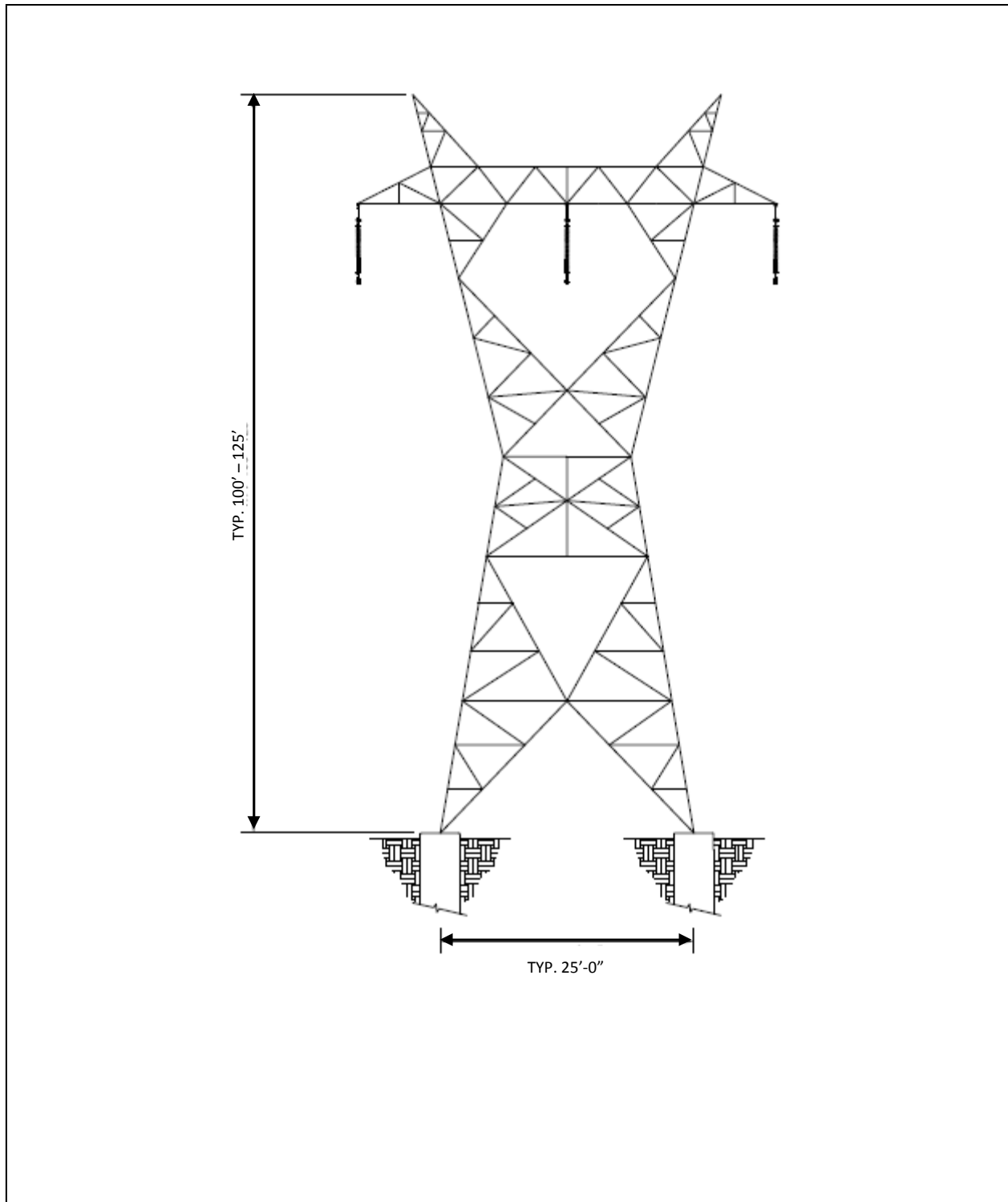
FIGURE 2.0-31  
TYPICAL SINGLE-POLE STRUCTURE - DOUBLE-CIRCUIT (SUSPENSION/"I" STRING)

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Source: CSE, 2011e.

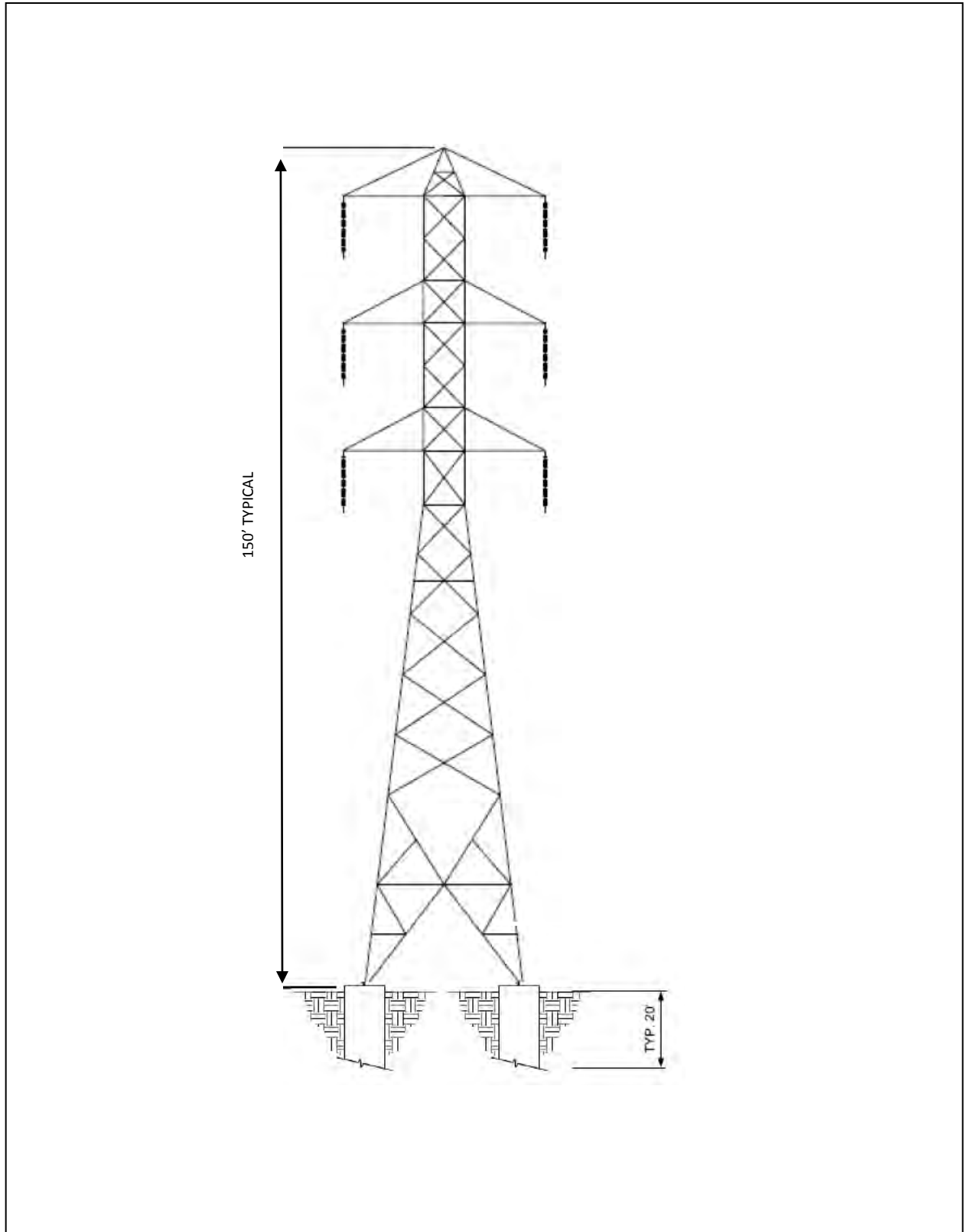
FIGURE 2.0-32  
TYPICAL LATTICE STRUCTURE – SINGLE CIRCUIT

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Source: CSE, 2011e.

FIGURE 2.0-33  
TYPICAL LATTICE STRUCTURE - DOUBLE CIRCUIT



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### D. Imperial Valley Substation Modifications

SDG&E will make limited modifications to the Imperial Valley Substation to accommodate the interconnection (such as adding breakers, etc.). However, any required work is anticipated to be completed within the existing fence line of the Imperial Valley Substation. Additionally, the Applicant will coordinate with SDG&E, IID, and other electric line owners at Imperial Valley Substation on the routing and approach into the Imperial Valley Substation.

### E. Access

The Gen-tie Line will require vehicular access for construction, operation, and maintenance. Descriptions of access to the Gen-tie Line on BLM land and private land are provided below.

**BLM Land. Figures 2.0-22 through 2.0-25 depict access to the Gen-tie Line on BLM land.** Existing access roads will be used to the extent practicable, particularly where there are multiple existing electric lines with associated access roads. New access roads will be constructed with proper water management and erosion control (i.e. bladed) where sufficient access does not already exist. The following specifications apply for existing and new access roads located on lands managed by BLM during construction, operation, and maintenance of the Gen-tie Line:

- **Existing Unpaved Roads.** These existing dirt or gravel roads will not require improvements to support construction vehicles to access the ROW. Regular maintenance for construction (such as repair and prevention of washout areas, graveling, and installation of gravel pads for controlling trackout [i.e. dirt, mud or other debris tracked onto a paved public road by a vehicle leaving the construction site]) will occur in these areas. The outer edge of existing unpaved access roads that have been approved by the BLM for the project will be staked where necessary. If it is determined that one of these roads needs improvement or redesign, CSE will notify the BLM in writing and conduct any necessary environmental inspections (e.g., biological, cultural, paleontological) before starting any improvements. Activities considered as improvements include road widening, road hardening, road straightening, installation of culverts, and stormwater retention structures.
- **New Unpaved Access Roads.** These roads will be generally up to sixteen-feet wide bordered by one-foot high and two-foot wide berms on either side. Construction of these new access roads may include mowing any grasses and vegetation as one of the first steps to facilitate travel for construction vehicles and minimize the potential for fires. Other construction activities may include blading, bridge/culvert construction, and tree removal, if necessary and only after receiving written approval from the BLM El Centro Field Office Manager. New roads that are not necessary for operation and maintenance of the electric line will be restored following construction in accordance with a restoration plan approved by the BLM. Approved new access roads will be staked to a standard width of up to 20-feet wide. Typical road detail drawings are provided in **Figure 2.0-34**. Road construction will avoid desert washes and leave desert wash banks and beds intact, unless a BLM hydrologist determines that hydrological flow will not alter landscape topography and increase storm-related erosion as a result of road construction.

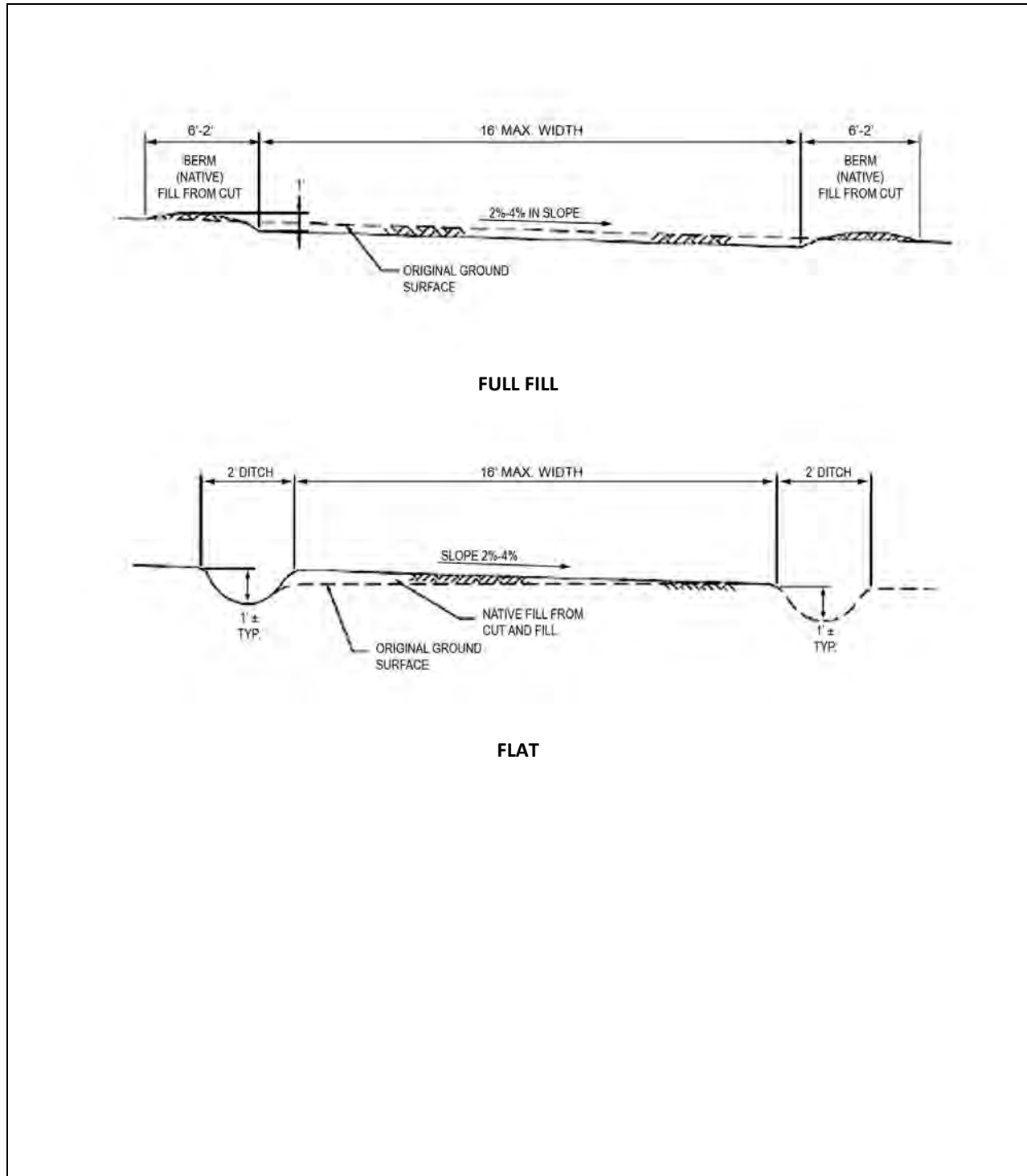
In the area where the Gen-tie Line is adjacent to the existing 230-kV electric lines and associated access roads, short “spur” access roads will be constructed from the existing access roads to each Gen-tie

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Source: CSE, 2011e.

FIGURE 2.0-34  
TYPICAL ROADWAY SECTIONS

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tower location to minimize further disturbance to soils. The spur roads will be new unpaved access roads constructed according to the specifications above. Access to the portion of the Gen-tie Line near the Imperial Valley Substation will be via the existing unpaved substation access road that intersects SR 98 approximately four miles southwest of Imperial Valley Substation. Gen-tie Line structures closer to SR 98 will be accessed via the existing unpaved transmission line access road that intersects SR 98 approximately 2.5 miles south of the Imperial Valley substation.

Where the Gen-tie Line diverts from the existing 230-kV lines and associated access roads and aligns east toward private land developed with CSE PV solar panel installations, CSE will construct a new bladed access road within the right-of-way and intersect Mount Signal Road. The new bladed road will be a new unpaved 16-foot wide access road with 2-foot high berms on either side. The towers in this segment could be accessed either from Mount Signal Road or via the existing 230-kV transmission line access road from SR 98.

**Private Land.** Access to the Gen-tie Line on private land is depicted in **Figure 2.0-25**. The Gen-tie Line structures east of Mount Signal Road and west of the IID Westside Main Canal will be accessed via Mount Signal Road or from the existing farm roads aligning north to south and intersecting SR 98. From these roads, individual Gen-tie Line structure site locations will be accessed by traveling across the existing farm fields. No permanent access roads will be constructed, and any temporary disturbance to the farm fields will be restored and the field areas returned to agricultural condition after construction or maintenance.

Gen-tie structures east of the IID Westside Main Canal (i.e., structures on CSE Facility parcels) will be accessed from CSE Facility access gates on SR 98, Pulliam Road, and Brockman Road. The Applicant's access from SR 98 will include a paved apron (i.e., driveway) that will be subject to the terms and conditions of a Caltrans encroachment permit. No permanent roads will be constructed for access to the Gen-tie Line on the CSE Facility parcels as the structures at these locations will be accessible overland, and disturbance associated with the Gen-tie Line within the CSE Facility parcels will be repaired after construction or maintenance.

### F. Disturbance Area

The Gen-tie Line structures proposed on private land will be constructed in previously disturbed agricultural areas. Permanent surface disturbance associated with the Gen-tie Line will be limited to the footprint of the individual Gen-tie Line structures themselves (no permanent access roads will be constructed on land to be used for continued agricultural production) and will not exceed a total of one-tenth of an acre.

### G. Construction Process for Gen-tie Line

Construction and operation of the Gen-tie Line on BLM land as part of the Proposed Action will result in approximately 18.16 acres of temporary ground disturbance and approximately 4.77 acres of permanent ground disturbance, depending on the alternative(s) implemented. Areas of temporary and permanent disturbance for the construction areas were calculated based on geographic information systems assuming maximum reasonable standard dimensions for the various project feature types., **Table 2.0-3** summarizes temporary and permanent disturbance acreages for the Proposed Action (as well as Alternatives 1, 2 and 3 described in subsections 2.2.2, 2.2.3 and 2.2.4, below). Surface disturbances on BLM land during construction of the Gen-tie Line will be limited to the areas shown in **Figure 2.0-22** through **Figure 2.0-25**. Construction Process for the Gen-tie Line

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**TABLE 2.0-3  
GEN-TIE LINE DISTURBANCE ACREAGE DETAILS (BLM LAND)**

Structure/Feature	Acreage of Disturbance on BLM land					
	Proposed Action (Single Circuit)		Alternative 1 (Double Circuit Gen-tie Line)		Alternative 3 (Use Existing Electric Line Towers and 230-kV Line Looping)	
	Temp	Perm	Temp	Perm	Temp	Perm
<i>Access Roads</i>						
New Bladed Roads (Figures 2.0-22 through 2.0-25)	0.18	4.50	0.35	4.08	0.17	2.43
<i>Tower Structures</i>						
Tangent (Based on Lattice or Single-Pole)	--	0.012	--	0.021	--	0.006
Angle/Dead-End (Based on Three-Pole or Lattice)	--	0.019	--	0.019	--	0.005
Undercrossing (Based on Three-Pole)	--	0.004	--	0.004	--	0.016
Guard Structures	0.73	--	0.73	--	0.58	--
Subtotal:	0.73	0.035	0.73	0.044	0.58	0.027
<i>Construction Areas</i>						
Pulling & Tensioning Areas	5.35	--	5.35	--	4.53	--
Tower Structure Construction Pads	10.06	--	9.99	--	4.90	--
Wire Splicing Sites	0.97	--	1.15	--	--	--
Subtotal:	16.38	--	16.49	--	9.43	--
<b>Grand Total</b>	<b>17.29</b>	<b>4.54</b>	<b>17.57</b>	<b>4.13</b>	<b>10.18</b>	<b>2.46</b>
<b>Grand Total Plus 5% Contingency</b>	<b>18.16</b>	<b>4.77</b>	<b>18.45</b>	<b>4.34</b>	<b>10.69</b>	<b>2.58</b>

Source: CSE, 2011e.

NOTE: A Gen-tie Line alignment for Alternative 2 may be selected from the Proposed Action (described in subsection 2.1.5.3), Alternative 1 (described in subsection 2.2.2) or Alternative 3 (described in subsection 2.2.4). Any Gen-tie Line alignment selected would include a portion extending through BLM land.

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### **Construction Access**

Descriptions of access for the Gen-tie Line construction areas on federal and private lands are provided in subsection 2.1.5.3, item E.

### **Staging Areas**

For portions on the Gen-tie Line on BLM land, staging areas will be located at pulling and tensioning sites or at tower structure construction pad locations. These areas will be used to temporarily lay out equipment for work on specific activities at nearby locations.

For the private land portion of the Gen-tie Line, approximately roughly 1.5 acre area east of the CSE Facility substation will be used for laydown/staging of the Gen-tie Line (**Figure 2.0-17**). Additionally, temporary storage of equipment and materials will occur within the Applicant's Gen-tie Line easement or at temporary laydown areas within the CSE Facility.

### **Vegetation Clearing**

For both federal and private land associated with the Gen-tie Line, clearing of vegetation will be required for construction purposes (access roads, structure sites, pulling and tensioning areas, and laydown areas), clearances for electrical safety, long-term maintenance, and reliability of the electric line. Within or adjacent to segments of the line where vegetation will have the potential to create clearance issues, mature vegetation will be selectively removed under or near the conductors to provide adequate electrical clearance as required by General Order 95 (GO95) Rules for Overhead Electrical Line Construction. Tree removal will be required for trees that could fall onto the electric line, interfere with the electric line during wind-induced conductor swing, or otherwise present an immediate hazard to the electric line. Likewise, trees that have the potential to encroach within safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor, will be removed. If tree clearing under the electric lines is required, it would be selective. Vegetation removal is analyzed in Section 4.12, Biological Resources and mitigation would be implemented by a biological monitor in the field during construction.

### **Excavations**

Foundations will be excavated with power drilling equipment or excavator vehicles. Where soils permit, a vehicle-mounted power auger or backhoe will be used. In rocky areas, the foundation holes will be excavated by drilling or installing special rock anchors. Foundation holes left open or unguarded will be covered to protect the public and wildlife. If practical, fencing may be used to stabilize the soil before excavation. For each tower structure location, the primary foundation will be drilled or dug prior to installation of reinforcement and pouring of concrete. Tower structure footings will be installed by placing reinforcing steel and a tower stub or anchor bolt assembly into the foundation hole, positioning the stub or anchor bolt assembly, and encasing it in concrete. Spoil material (excavated soil) will be used for fill where suitable, and the remainder will be spread at the structure site or along graded access roads or in locations previously agreed upon by the Applicant and the BLM if on BLM land. The foundation excavation and installation will require access to the site by power augers or drills, cranes, material trucks, and ready-mix concrete trucks.

Based on the geological conditions of the area and the Applicant's review of the available geotechnical information, no blasting is expected to be necessary during construction. However, if blasting becomes necessary, effects would be minimized and would not be expected to be significant using the measures described below. Any blasting activities would be limited to areas where absolutely necessary, and



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precautions would be taken to protect workers, recreational users, the general public and natural resources. Prior to removing earth or rock with explosives, the Applicant will prepare a pre-blast survey and blasting plan for any blasting performed on BLM land. The pre-blast survey would be conducted for structures, public land resources and other sensitive features within a minimum radius of 1,000 feet from the identified blast site. Other sensitive receptors beyond 1,000 feet from the blast site that could reasonably be affected by blasting, would also be surveyed as part of the pre-blast survey. The blasting plan, which would be reviewed and approved by the BLM prior to implementation, would outline the blasting procedures for removing rock material at the proposed Gen-tie structure locations and would address the location of the blasting area; safety and security considerations; biological and cultural resources; risk management; blast design; transport and storage of explosives; and required recordkeeping.

### **Construction Workforce**

The Gen-tie Line construction workforce will range from approximately 12 workers during mobilization and surveying and up to 50 workers during foundation installation and structure erection. Construction workers will park in one of the two dedicated multi-use areas. From these locations construction workers will ride in construction vehicles (e.g., sport utility vehicles, shuttle bus), or, when close by, walk to the active construction area. Construction crews are expected to work a maximum of six, 10-hour days per week (typically Monday through Saturday), generally beginning work at 7:00 AM and concluding at 5:00 PM each day (CSE, 2011c).

### **Water Use**

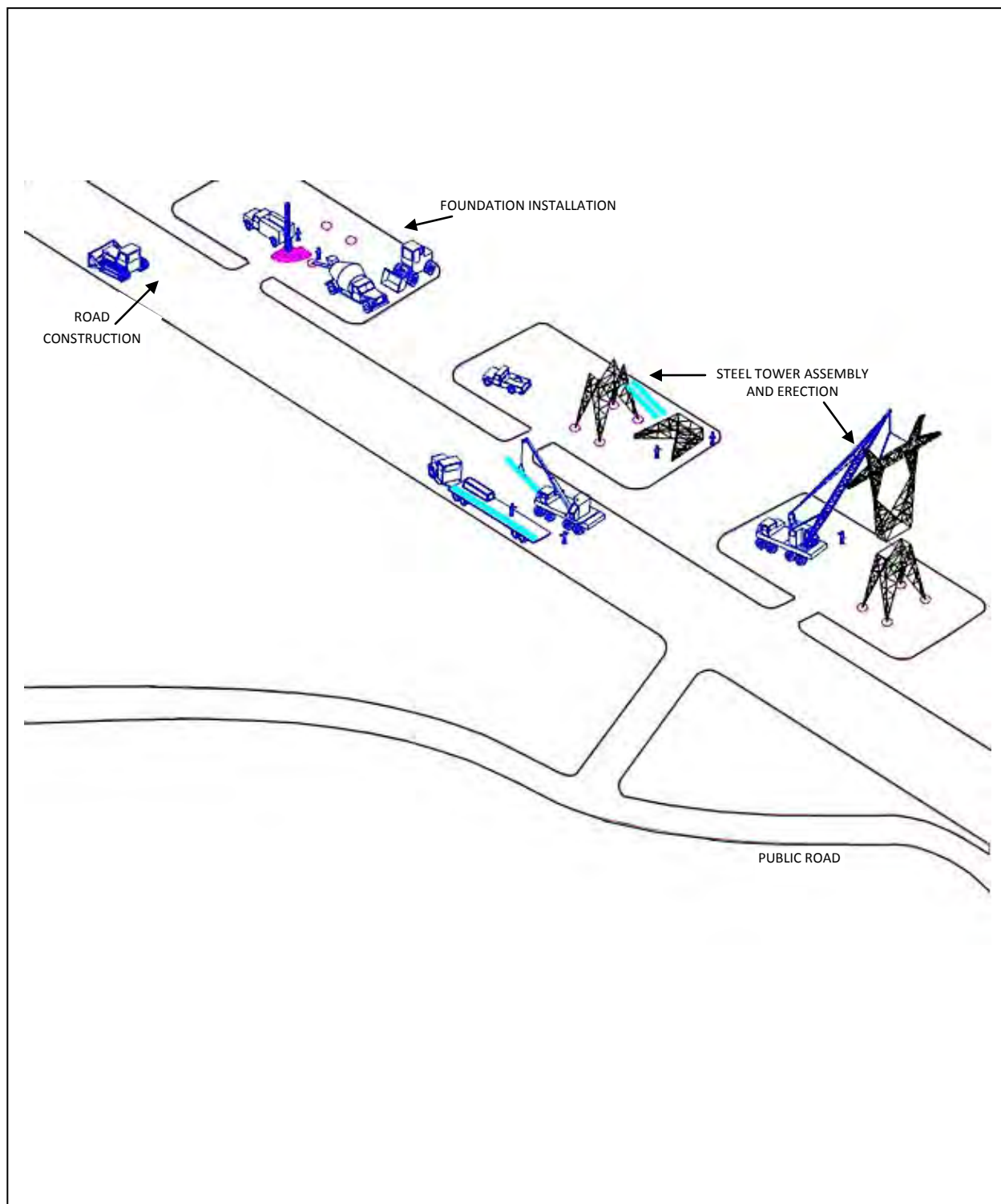
The Gen-tie Line will require very little water for construction, using up to approximately 3 acre-feet for dust control for each month of construction.

### **Assembling and Erecting Structures with Temporary and Permanent Pad Sites**

Trucks will transport structures and associated hardware, insulators, and stringing sheaves to each structure site. The structure will be assembled on the ground and then lifted onto the foundations. This procedure is illustrated in **Figure 2.0-35**. An assembly area up to approximately 125-feet by-150 feet will be temporarily disturbed for assembling and erecting the structures using a crane. Wire pulling and tensioning assembly sites will temporarily disturb an area up to approximately 125-feet by 400-feet for angle and dead-end structure conductor and shield wire sites (at all dead-end structures). Wire-splicing assembly sites will temporarily disturb an area up to approximately 125-feet by 400-feet per each conductor and shield wire set-up site (approximately every 9,000 feet). Guard structures will temporarily disturb an area up to approximately 100-feet by 100-feet at road and existing electrical line crossings. Disturbance acreages are listed in **Table 2.0-3**.

Permanent disturbance areas will occur at the base of each structure and for each new access road (20-foot wide with unpaved surface) that is bladed. The permanent disturbance areas will occur inside assembly work areas described above and will not create any additional temporary disturbance. Permanent disturbance areas for each Gen-tie Line structure range from 29-square-feet for lattice or single-pole tangent (in-line) structures up to 116-square feet for three-pole dead-end structures.

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Source: CSE, 2011e.

FIGURE 2.0-35  
TYPICAL CONDUCTOR STRINGING ACTIVITIES

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### **Stringing Conductors and Ground Wires**

Insulators, hardware, and stringing sheaves will be delivered to each structure site. The structures will be rigged with insulator strings and stringing sheaves at each ground wire and conductor position. For protection of the public during wire installation, guard structures will be erected over highways, railroads, power lines, structures, and other barriers. Guard structures will consist of H-frame wood poles placed on either side of the barriers or by using boom trucks raising a guard cross beam. These structures will prevent ground wires, conductors, or equipment from falling across obstacles. Equipment for erecting guard structures will include augers, backhoes, line trucks, boom trucks, pole trailers, and cranes. Guard structures may not be required for minor or agricultural roads. In such cases, other safety measures such as barriers, flagmen, or other traffic control will be used. Following stringing and tensioning of all conductors, the guard structures will be removed, and the area restored.

Pilot lines will be pulled (strung) from structure to structure by either a helicopter or land operated equipment, and threaded through the stringing sheaves at each structure. The pilot lines will be used to pull in a stronger, larger diameter line attached to conductors that pulls the conductors onto structures. This process will be repeated until the ground wire or conductor is pulled through all sheaves.

Ground wires and conductors will be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end of a conductor segment. Sites for tensioning equipment and pulling equipment will be at heavy angle structures. Tensioners, pullers, line trucks, wire trailers, dozers, pickups, and tractors needed for stringing and anchoring the ground wire or conductor will be at these sites. The tensioner, in concert with the puller, will maintain tension on the ground wire or conductor while it is fastened to the structures. This procedure is illustrated in **Figure 2.0-36**.

### **Installing Counterpoise (Structure Grounds) Where Needed**

Part of standard construction practices prior to conductor installation will involve measuring the resistance of the ground to electrical current near the structures. If the measurements indicate a high resistance, counterpoise will be installed, which will consist of trenching in-ground wire to a depth of 12 to 18 inches, with a ground rod driven at the end. The counterpoise will be contained within the limits of the right-of-way or easement, and may be altered or doubled back and forth as necessary. Typical equipment used for installing ground rods includes line trucks, backhoes, trenchers, etc.

### **Grounding within ROW**

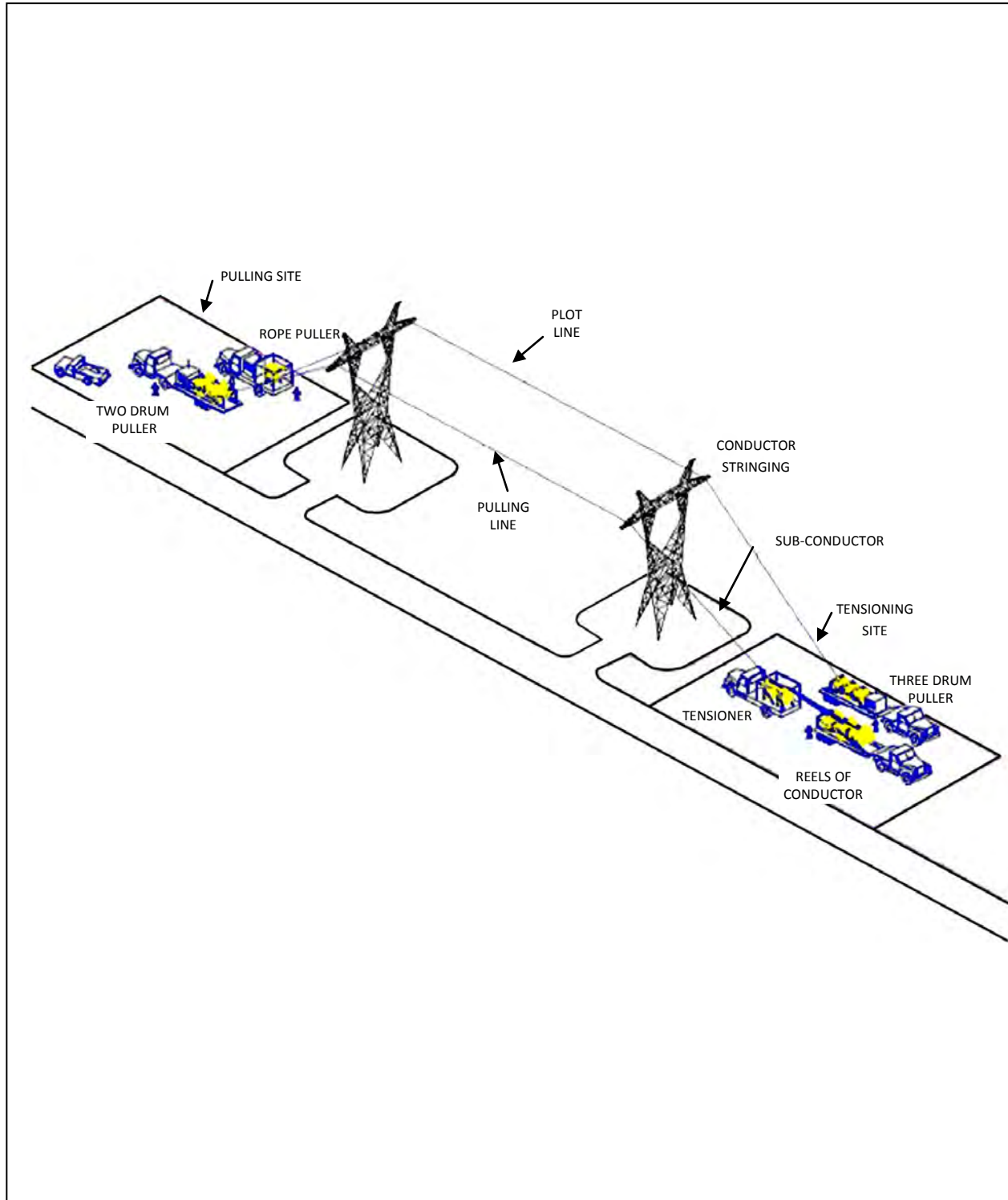
The construction contractor will be responsible for properly grounding all metallic fences on BLM land that parallel the electric line for more than 500 feet and are within the ROW. On private land, grounding will be installed on metallic fences as necessary. Grounding will also be completed for metal buildings and other types of metallic objects within the ROW on BLM land and as necessary on private land.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

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## 2.0 PROPOSED ACTION AND ALTERNATIVES



Source: CSE, 2011e.

FIGURE 2.0-36  
TYPICAL CONDUCTOR STRINGING ACTIVITIES

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## 2.0 PROPOSED ACTION AND ALTERNATIVES

### **Cleanup and Restoration of Affected Areas**

Construction sites, material storage yards, and access roads will be kept in an orderly condition throughout the construction period. Refuse and trash will be removed from the sites and disposed of in an approved manner (e.g., in an approved landfill). No open burning of construction trash will occur. Contaminants such as oils, hydraulic fluids, antifreeze, and fuels will not be dumped on the ground. The Applicant will clean up all spills in accordance with federal and State of California regulations. The Applicant will restore areas of the ROW on BLM land not needed for long-term operation and maintenance when construction is complete in accordance with a Restoration Plan approved by the BLM and in conformance with federal and state environmental laws. Temporarily disturbed areas to be addressed in the Restoration Plan include, but are not limited to: temporary access roads, temporary lay-down areas, construction equipment staging areas, and disturbance associated with constructing the tower structures.

Areas of agricultural land temporarily disturbed by construction of the Gen-tie Line, but not part of the CSE Facility, will be restored to agricultural use following construction. Temporary disturbances within CSE Facility parcels will be restored in accordance with the Applicant's requirements.

### **Construction of New Access Roads**

Access to the Gen-tie Line during construction is described in detail in subsection 2.1.5.3, item E above.

#### **H. Construction Schedule for the Gen-tie Line**

Tower erection requires that all tower foundations are complete and that concrete has cured sufficiently to support the tower without conductors attached. Wire stringing requires that all foundations are cured to design specifications, all poles are erected, and foundations cured to design specifications. Aside from site surveys and intermittent site visits during the design phase, **Table 2.0-4** provides estimates of work days onsite activity is estimated as shown in **Table 2.0-4**.

**TABLE 2.0-4  
GEN-TIE LINE CONSTRUCTION SCHEDULE**

Task Name	Number of Working Days
Survey/Stake	18
Construction Mobilization	26
Construction Access Roads	10
Install Foundations	40
Haul, Assemble, Erect Structures	50
Install conductors, Shield Wire, OPGW	20
Clean-Up/Restoration	12
Energize	1

*Source: CSE, 2011c (Figure C-1 Construction Schedule 175-MW).*

Adjusting for construction sequence and overlap of activities, construction of the Gen-tie Line is projected to take approximately 3 to 4 months, although periodic restoration activities will continue until the BLM approves the required restoration. Concurrent activities are most intense during foundation installation and assembly and erection of structures.



### I. Operations and Maintenance of Gen-tie Line and Roads Associated with the Gen-tie Line

The design of the Gen-tie Line will minimize operation and maintenance requirements. Typical operation and maintenance tasks will include periodic inspections of the equipment and access roads, with repairs made as necessary. Removing natural vegetation may be required to maintain clearances for electrical safety, long-term maintenance, and reliability of the electric line. Within or adjacent to the right-of-way, vegetation will be selectively removed under or near the conductors to provide adequate electrical clearance as required by GO95. Tree removal will be required for trees that could fall onto the electric line, interfere with the electric line during wind-induced conductor swing, or otherwise present an immediate hazard to the electric line. Likewise, trees that have the potential to encroach within safe distance to the conductor as a result of bending, growing, swinging, or falling toward the conductor, will be removed. Selective clearing of vegetation benefits public safety by minimizing the potential for contact between vegetation and high-voltage electrical current, which could start fires or otherwise endanger human health.

#### **Road Maintenance for the BLM Public Lands**

The Gen-tie Line will be designed such that operation and maintenance requirements for roads and drainages are minimal. Typical operation and maintenance tasks will include periodic (e.g., annual) inspections of the equipment and access roads, with repairs made as necessary. Immediately after rainstorms, the Applicant will inspect the Gen-tie Line and project roads to diagnose storm-related maintenance needs and erosion. The BLM and the Applicant will agree upon and implement a rapid response plan to repair damage to roads and soils that are likely to impact the integrity of the Gen-tie Line and its associated infrastructure and to impact natural resources downslope of the Line.

#### **Noise**

Audible noise generated by the proposed Gen-tie Line would occur during operations as a result of electric Corona discharge. The Corona Affect (Corona) is a phenomenon associated with the electrical ionization of the air that occurs near the surface of the energized conductor and suspension hardware due to very high electric field strength. Corona is usually experienced as a random crackling or hissing sound (refer to Section 3.8, Noise for additional details on the Corona Affect). The Corona Affect from Gen-tie Line during both wet and dry conditions would be within acceptable noise limits as discussed in Section 4.8, Noise.

#### **Fire**

The Applicant will minimize the potential for fire during operation and maintenance of the Gen-tie Line by complying with the BLM California Desert District's fire restrictions. These restrictions currently require that all off-road vehicles operated on public lands must be equipped with a properly installed spark arrester pursuant to 43 CFR 8343.1 (C) and California Vehicle Code 38366(a) and that the spark arrester will meet either the U.S. Department of Agriculture-Forest Service Standard 5100-1a, or the 80 percent efficiency level standard determined by the Society of Automotive Engineers (SAEs) recommended practices J335 or J350.

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### **Air Quality**

Normal operations of project will not result in any direct air emissions from electricity transmission. Daily air pollutant emission sources are anticipated to be limited to vehicular traffic associated with project maintenance and operation activities.

### **Weed and Vegetation Management**

Weed management along the Gen-tie Line will most likely involve use of herbicides. The Applicant will prepare a Weed Management Plan, subject to approval by the BLM El Centro Field Office Natural Resources Division, that address both weed prevention and weed control responses. The BLM staff will assist the Applicant's staff and contractors with implementing Best Management Practices for weed control. National BLM policy requires that the Applicant will prepare a Pesticide Use Plan (PUP) for all proposed applications of herbicides on BLM lands. The PUP is subject then to review by the BLM Field Office, the BLM California State Office, and the BLM Washington Office before herbicide use occurs.

### **Waste Management**

All waste, including trash and litter, garbage, and other solid waste will be removed to a disposal facility authorized to accept such materials. Commercial garbage collection and hauling will be contracted to remove waste and recyclable materials.

### **Hazardous Material Handling and Storage**

Small quantities of hazardous materials will be used and stored on-site for miscellaneous, general maintenance activities. Hazardous materials are expected to include consumer-sized containers of oils, grease, paints and solvents. Small quantities of diesel fuel and gasoline may also be stored on-site. Dielectric insulating oil will be used in some electrical equipment. Oil-containing equipment will include a spill containment system designed to contain oil in the event of a leak. If diesel-fueled back-up pumps are required for fire protection, appropriate secondary containment will be provided for the diesel fuel tank. If pre-treatment, such as softening, is necessary for on-site water treatment, water treatment chemicals needed for that process would be used and stored at the CSE Facility (CSE, 2011d).

The Applicant will prepare a Hazardous Materials Management Plan (HMMP) or other similar plans, as applicable, prior to using or storing hazardous materials on the project site. The BLM El Centro Field Office will approve the Plan before implementation. Hazardous materials will be stored in appropriate storage containers in the maintenance building, garage, and water treatment building, as needed to support facility operations. All hazardous materials will be managed in compliance with applicable federal and State of California laws and regulations regarding transport, use, disposal and storage. All industrial wastes generated during construction, operation, and maintenance of the project will be disposed of in an approved location(s) (e.g., an approved landfill).

### **J. Decommissioning and Restoration of Gen-tie Line**

When the CSE Facility reaches the end of its operational life, the Gen-tie Line components will be evaluated for decommissioning and deconstruction. Components of the Gen-tie Line that may have become an integral part of the utility power grid will continue to be maintained and operated. Components that are not part of the utility power grid will be decommissioned and deconstructed as outline below. It is expected that many components will be suitable for recycling or reuse and the facility decommissioning will be designed to optimize such salvage as circumstances allow and in compliance

## 2.0 PROPOSED ACTION AND ALTERNATIVES

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with all local, State and federal regulations as in force at the time of decommissioning. Considerations for termination and restoration of the Gen-tie Line are discussed below for federal and private lands.

**BLM Land.** The Applicant will develop and implement a Restoration Plan to address Gen-tie Line disturbances on BLM land. The BLM will approve the Restoration Plan before construction begins for the Gen-tie Line on BLM land and will address in detail the removal of Gen-tie Line equipment and restoration of affected areas at the end of the life of the project. The termination and restoration procedures will restore the landscape as near to original conditions as practicable and is expected to include, but not be limited to, the following information:

- Identification of facilities and features, restored, and/or rehabilitated;
- Procedures for removal of features and restoration/reclamation;
- Stabilization and restoration techniques to be used during restoration.

**Private Land.** The decommissioning of the Gen-tie Line on private land will essentially reverse the construction process outlined above and is expected to generally include the following steps:

- The Gen-tie Line will be electrically disconnected from the bulk power grid
- Wires will be removed from the towers and recycled or sold
- Poles and towers used to support the wires will be removed and recycled or sold. Concrete foundations will be removed and demolished at or below ground level. Concrete removed will be recycled or used as fill.
- Areas disturbed by the removal process will be restored to agricultural use

### 2.1.5.4 DESIGN FEATURES AND BEST MANAGEMENT PRACTICES

The Applicant has incorporated design features and Best Management Practices to mitigate impacts associated with environmental issues to less than significant levels. Additionally, some mitigation measures have been incorporated to minimize impacts that will still remain significant with respect to CEQA and NEPA. These measures are summarized in **Table 2.0-5** (for the CSE Facility and Gen-tie Line on private land) and **Table 2.0-6** (for the Gen-tie Line on federal [BLM] land) and identified in the relevant chapters of this EIR/EA.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Design	"Dulled" metal finish electric line structures will be used to reduce visual impacts.	Visual Resources
Design	CSE Facility buildings and equipment enclosures (e.g., inverter enclosures) will be painted a neutral, non-reflective color.	Visual Resources
Operation & Maintenance	At the end of the useful life of the CSE Facility, the Applicant shall remove the PV array blocks from the CSE Facility site and restore the land in the PV array areas to a condition such that the land would be suitable for agricultural use.	Agricultural Resources
Design	Design project features to the extent practicable to avoid conflicts with Imperial County Department of Public Works road setback requirements and zoning-derived setback requirements.	Land Use
Design, Pre-Construction	For any project features encroaching on Imperial Irrigation District (IID) facilities, obtain IID encroachment permit(s) to minimize any effects on existing infrastructure.	Existing Infrastructure
Design, Pre-Construction	For any project features encroaching on California Department of Transportation (Caltrans) rights-of-way (e.g., aerial electric line crossings, driveways), obtain Caltrans encroachment permit(s) to protect public safety.	Existing Infrastructure, Public Safety,
Construction	Any work requiring traffic control on SR 98 will be conducted in accordance with a traffic control plan approved by Caltrans.	Public Safety
Design, Construction, Operation & Maintenance	Aerial marker balls will be installed on the shield wires of the Gen-tie Line in accordance with manufacturer's instructions for spans crossing State SR 98 and the Westside Main Canal.	Public Safety/Aviation
Design, Operation & Maintenance	Any gates onsite shall have a Knox box or equivalent access mechanism and be accessible by the Imperial County Fire Department.	Public Safety, Health, Safety and Hazardous Materials/Fire and Fuels Management
Design, Operation & Maintenance	During operation and maintenance of the project, use minimum necessary nighttime lighting for security purposes, designed to eliminate glare or spillover to areas outside of the project site.	Night Lighting
Design, Construction	Reduce construction night lighting impacts by designing and installing all lighting at construction and storage yards and staging areas such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project facilities, vicinity, and nighttime sky is minimized.	Night Lighting
Design	Use steel monopole Gen-tie structures for locations on agricultural land to minimize impacts on agricultural operations.	Agricultural Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Design	Except where paving is necessary, use permeable road materials (e.g., aggregate) for internal roads and turnaround areas to minimize stormwater runoff.	Storm Water, Water Quality
Design	Incorporate retention/detention basin into CSE Facility design to minimize sedimentation and storm water runoff impacts.	Storm Water, Water Quality
Construction	Obtain coverage and comply with general construction stormwater permit during construction. Prepare, implement, and maintain a storm water pollution prevention plan (SWPPP) during construction.	Storm Water, Water Quality
Operation & Maintenance	Obtain coverage and comply with general industrial stormwater permit during operations. Prepare, implement, and maintain a storm water pollution prevention plan (SWPPP) during operations.	Storm Water, Water Quality
Construction	Only personnel trained in refueling vehicles would be allowed to perform this operation. All refueling operation shall be in designated areas or preformed by assigned vehicles.	Storm Water, Water Quality, Wetlands, Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction	All construction vehicles and project-owned vehicles on site will be properly maintained in good working condition to minimize the potential for leaks and minimize emissions.	Storm Water, Water Quality, Air Quality, Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction, Operation & Maintenance	Implement all measures necessary for compliance with the applicable provisions of Imperial County Air Pollution Control District (ICAPCD) Rules 800, 801, 802, 803, 804, and 805. Examples of such measures include, but are not limited to, vehicle speed limits, dust control with water and/or dust suppressants, suspending operations during high-wind episodes, trackout controls, etc.	Air Quality
Construction, Operation & Maintenance	Develop and implement a dust control plan in accordance with Imperial County Air Pollution Control District requirements; and air quality permits for construction activities and operations shall be obtained as required. Open burning of construction waste will not be allowed.	Air Quality
Construction	Vehicles and equipment shall be parked on designated CSE Facility parking areas, CSE Facility roads, and previously disturbed areas to the extent practicable.	Air Quality, Stormwater
Design	Minimize project effects on wetlands, streambeds, and stream banks (i.e., California Department of Fish and Game (CDFG) or U.S. Army Corps of Engineers (USACOE) jurisdictional areas) by designing and siting project features outside of these areas to the extent practicable.	Wetlands, Biological Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Pre-Construction	Where avoidance of jurisdictional areas is not practicable, the Applicant shall provide the necessary mitigation required as part of wetland permitting by creation / restoration / preservation of suitable jurisdictional or equivalent habitat along with adequate buffers to protect the function and values of jurisdictional area mitigation. The location(s) of the mitigation would be determined in consultation with the agencies.	Wetlands, Biological Resources
Construction	Alcohol, fireworks, and illegal drugs are prohibited on the project site.	Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction, Operation & Maintenance	<p>A Worker Environmental Education Program (WEEP) will be prepared and all construction crews and contractors will be required to participate in WEEP training prior to starting work on the project. The WEEP training will include:</p> <ul style="list-style-type: none"> <li>• A review of the special-status species and other sensitive resources that exist in the project Area, the locations of the sensitive biological resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources;</li> <li>• An overview of requirements related to stormwater and wetlands; and</li> <li>• Information on historic and prehistoric cultural resources and paleontological resources in the project Area, training on identification of resources, and protocols for addressing unanticipated discoveries.</li> <li>• A record of all personnel trained will be maintained.</li> </ul>	Biological Resources, Cultural Resources
Design, Construction, Operation & Maintenance	For the span of the Gen-tie Line crossing the Westside Main Canal, bird flight diverters shall be installed on the shield wire(s) with spacing consistent with manufacturer's recommendations.	Biological Resources
Operation & Maintenance	Monitor evaporation ponds daily for avian use. If a pattern of avian activity in the ponds is observed, implement appropriate measures to minimize avian presence and effects on avian species (e.g., noise deterrents, "catch and treat" program, netting, etc.).	Biological Resources
Design	All overhead electric lines will be designed to be raptor-safe in accordance with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006 (Avian Power Line Interaction Committee [APLIC] 2006).	Biological Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction, Operation & Maintenance	Feeding of wildlife is not allowed.	Biological Resources
Construction, Operation & Maintenance	To prevent harassment or mortality of native wildlife, or destruction of habitat by, no pets will be permitted on project sites.	Biological Resources
Construction	All food-related trash items including wrappers, cans, bottles, and food scraps, will be disposed of and placed in a covered dumpster or waste tote each day for scheduled removal from the site to prevent attracting ravens and other scavengers to the area.	Biological Resources
Pre-Construction	<p>An avian and bat protection plan (ABPP) will be prepared and approved by the U.S. Department of the Interior Bureau of Land Management (BLM) and U.S. Fish and Wildlife Service (USFWS), prior to surface disturbing activities, which will outline conservation measures for construction and operation and maintenance (O&amp;M) activities to minimize potential impacts to bird populations. The conservation measures in the ABPP will include the following:</p> <ul style="list-style-type: none"> <li>• Minimizing disturbance to native vegetation to the extent practicable.</li> <li>• Clearing native vegetation outside of the breeding season. If construction occurs between February 1 and September 15, a qualified biologist shall conduct a pre-construction clearance survey for nesting birds in suitable nesting habitat that occurs within the proposed area of impact. Pre-construction nesting surveys will identify any active migratory birds (and other sensitive non- migratory birds) nests. Direct impact to any active migratory bird nest should be avoided to the extent practicable.</li> <li>• Minimizing wildfire potential.</li> <li>• Minimizing activities that attract prey and predators. Control of non-native plants.</li> <li>• Applying APLIC design guidelines for overhead utilities (APLIC 2006) to minimize the potential for avian impacts by the Gen-tie Line.</li> <li>• Preparing a Raven Control Plan that avoids introducing water and food resources in the area surrounding the CSE Facility.</li> <li>• Minimizing noise.</li> <li>• Minimizing use of outdoor lighting.</li> <li>• Implementing post-construction avian monitoring and reporting.</li> </ul>	Biological Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction, Operation & Maintenance	Use of chemicals, fuels, lubricants, or biocides will be in compliance with all local, state and federal regulations. All uses of such compounds should observe label and other restrictions mandated by the U.S. EPA, California Department of Food and Agriculture, and other state and federal legislation, as well as additional project-related restrictions deemed necessary by the USFWS and/or CDFG.	Biological Resources, Health, Safety and Hazardous Materials/Fire and Fuels Management
Design, Operation & Maintenance	The on-site septic system and leach field will meet all specifications of the Imperial County Health Department (ICHHD) and the Regional Water Quality Control Board (RWQCB).	Health, Safety and Hazardous Materials/Fire and Fuels Management
Design, Operation & Maintenance	Water storage tanks will be used to protect against interruptions in water service and to provide storage capacity for fire suppression. Up to nine, 10,000-gallon firewater tanks will be distributed throughout the CSE Facility. Water storage at the common services area would be capable of supplying additional water for sanitary water supply and/or fire protection.	Health, Safety and Hazardous Materials/Fire and Fuels Management
Operation & Maintenance	To facilitate fire protection, perimeter roads will be a minimum of 24-feet wide and interior roads will be a minimum of 20-feet wide. Turning circles with a minimum outside radius of 60 feet will be provided on the interior roads at regular intervals. Spacing between the planned interior roads will not exceed 500 feet.	Health, Safety and Hazardous Materials/Fire and Fuels Management
Operation & Maintenance	Portable fire extinguishers of appropriate sizes and types will be located throughout the CSE Facility site. In particular, Class C (electrical) rated fire extinguishers will be mounted at each inverter. Buildings in the common services areas will be designed with fire protection systems based on applicable requirements.	Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction, Operation & Maintenance	All fuels, fluids, components with hazardous materials/wastes will be handled in accordance with applicable regulations. All such materials will be kept in segregated storage with secondary containment as required.	Biological Resources, Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction	During construction, all trash, food items, and human-generated debris shall be properly contained and/or removed from the site during scheduled collection.	Health, Safety and Hazardous Materials/Fire and Fuels Management
Construction, Operation & Maintenance	Hazardous materials shall not be drained onto the ground or into streams or drainage areas. All construction waste, including trash and litter, garbage, other solid waste, petroleum products, and other potentially hazardous materials, shall be removed to a disposal facility authorized to accept such materials.	Health, Safety and Hazardous Materials/Fire and Fuels Management



## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction	<p>Prior to the application of herbicides on the CSE Facility for weed management, a weed control plan shall be developed and approved by the County of Imperial Agricultural Commissioner. The weed control plan shall provide the following:</p> <ol style="list-style-type: none"> <li>1) Monitoring, preventative and management strategies for weed control during construction activities at the CSE Facility;</li> <li>2) Control and management of weeds in areas temporarily disturbed during construction where native seed will aid in site revegetation; and,</li> <li>3) A long-term strategy for weed control and management during the operation of the CSE Facility.</li> </ol>	Agricultural Resources Noxious Weeds
Design, Construction	To the extent practicable, the CSE Facility and Gen-tie Line will be engineered and designed to avoid any cultural resources eligible for listing in the National Register of Historic Places (NRHP). Such resources will be mitigated as specified in accordance with the approved historic properties treatment plan for the project.	Cultural Resources
Construction	Cultural resources sites eligible for listing in the NRHP adjacent to project features but not directly impacted by construction shall be avoided during construction. Temporary fencing or other approved marking around the perimeter of such sites will be required to ensure that project impacts remain within the proposed impact area and that cultural resources are avoided by project personnel.	Cultural Resources
Construction	In the event of an unanticipated discovery during construction of suspected archaeological or paleontological materials, all grading or excavation shall cease in the area of the discovery, and the find left undisturbed until a qualified professional archaeologist or paleontologist, whichever is appropriate, is contacted to evaluate the discovery and make recommendations as to significance, disposition, mitigation, and/or salvage.	Cultural Resources
Construction, Operation & Maintenance	In the event that unanticipated historical or unique archaeological resources are encountered during construction or operational repairs, construction work in the area of discovery shall be temporarily diverted until the significance and the appropriate mitigation measures are determined by a professional archaeologist familiar with the resources of the region. Applicant shall provide contingency funding sufficient to allow for implementation of avoidance measures or appropriate mitigation.	Cultural Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-5**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES - CSE FACILITY AND GEN-TIE LINE**

<b>Applies During</b>	<b>Proposed Design Features/Best Management Practice</b>	<b>Impact/Environmental Issue Addressed</b>
Construction	If human remains are discovered, work will be halted in that area, and the procedures set forth in the CEQA Guidelines Sec. 15064.5 (d) and (e), California PRC Sec. 5097.98 and state HSC Sec. 7050.5 and the Native American Graves Protection and Repatriation Act (NAGPRA) shall be followed, as applicable.	Cultural Resources
Pre-Construction	Prior to construction, the Applicant shall conduct and submit to Imperial County and the BLM an inventory of significant paleontological resources within the affected area based on field surveys of areas identified as marginal through high or undetermined paleontological sensitivity potential.	Paleontological Resources

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Design / Construction (federal land only)	Use existing access roads where practicable.	Biological Resources Cultural Resources
Construction (federal land only)	A cultural monitor will be present in areas where construction or restoration surface-disturbing activities are occurring throughout the work day from initial clearing through habitat restoration.	Cultural Resources
Construction (federal land only)	The area of disturbance of native vegetation and soils (including grading) shall be minimized. Wherever practicable, rather than clearing native vegetation and grading the ROW, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary within temporary disturbance areas, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent practicable, disturbance of native shrubs and surface soils due to stockpiling shall be minimized.	Biological Resources (FTHL)
Construction (federal land only)	A biological monitor will be present in each area where construction or restoration work is occurring throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of FTHLs by an approved biologist.	Biological Resources (FTHL)
Const, Operation & Maintenance (federal land only)	No native plant or wildlife species shall be collected from the project site.	Biological Resources
Construction (federal land only)	All construction vehicle movement outside the right-of- way would be restricted to pre-designated access or public roads.	Biological Resources Traffic & Circulation
Design / Construction (federal land only)	The areal limits of construction activities would be predetermined, with activity restricted to and confined within those limits. No paint or permanent discoloring agents would be applied to rocks or vegetation to indicate survey or construction activity limits.	Biological Resources Cultural Resources
Construction (federal land only)	In construction areas where re-contouring or excavation is not required, native vegetation would be left in place wherever practicable, and original contour would be maintained to avoid excessive root damage and allow for re-sprouting.	Biological Resources Geology & Soils
Construction (federal land only)	In construction areas (e.g., pulling & tensioning, tower construction sites) where ground disturbance is required or where re-contouring is required, surface restoration would occur as required by the BLM. The method of restoration would normally consist of returning disturbed areas back to their natural contour, reseeding (if required), providing for erosion control, and filling ditches.	Biological Resources Geology & Soils

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Design / Construction (federal land only)	As applicable, roads shall be built as near as practicable at right angles to streams and washes. Culverts shall be installed where necessary. All construction and maintenance activities shall be conducted in a manner that would minimize disturbance to native vegetation, drainage channels, and intermittent or perennial stream banks. In addition, road construction shall include dust control measures in accordance with local dust control requirements. All existing unmarked roads would be left in a condition equal to or better than their condition prior to the construction of the electric line.	Traffic & Circulation Biological Resources Hydrology & Water Quality Air Quality
Construction (federal land only)	Fences and gates shall be repaired or replaced to their original pre-disturbed condition as required by the BLM if they are damaged or destroyed by construction activities. Temporary gates shall be installed only with the permission of the BLM, and shall be removed following construction.	Existing Infrastructure Traffic & Circulation
Construction (federal land only)	During operation of the electric line, the right-of-way would be maintained free of non-biodegradable debris. Slash will be left in place or disposed of in accordance with requirements of the BLM.	Biological Resources
Construction (federal land only)	Speed limits along all Gen-tie Line access roads should not exceed 15 miles per hour during construction and operation and maintenance (O&M). Gen-tie Line access for O&M activities shall be kept to the minimum necessary for operations.	Biological Resources (FTHL), Air Quality
Construction (federal land only)	Prior to ground-disturbing activities, an individual shall be designated and approved by the BLM as a Designated Biologist (i.e., field contact representative). A Designated Biologist will be designated for the period during which on-going construction and post-construction monitoring and reporting by an approved biologist is required, such as annual reporting on habitat restoration. Each successive Designated Biologist will be approved by the BLM's Authorized Officer (i.e., BLM field manager, El Centro).	Biological Resources (FTHL)

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
	<p>The Designated Biologist will have the authority to ensure compliance with the conservation measures for the FTHL and will be the primary agency contact for the implementation of these measures. The Designated Biologist will have the authority and responsibility to halt activities that are in violation of the conservation measures. A summary of the responsibilities of the Designated Biologist is provided below. To avoid and minimize impacts to biological resources, the Designated Biologist will:</p> <ul style="list-style-type: none"><li>• Supervise the Biological Monitors associated with the project.</li><li>• Notify the BLM's Authorized Officer at least 14 calendar days before initiating ground-disturbing activities.</li><li>• Immediately notify the BLM's Authorized Officer in writing, if the Applicant does not comply with any conservation measures, including but not limited to any actual or anticipated failure to implement conservation measures within the periods specified.</li><li>• Conduct compliance inspections at a minimum of once per month during on- going construction after clearing, grubbing, and grading are completed and submit a monthly compliance report to the BLM's Authorized Officer until construction is complete.</li></ul>	
Design / Construction (federal land only)	<p>All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas that have been flagged to minimize adverse impacts to the FTHL and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.</p>	Biological Resources (FTHL)

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction (federal land only)	<p>Biological Monitor(s) will assist the Designated Biologist in conducting pre- construction surveys and monitoring mobilization, ground disturbance, grading, construction, operation, closure, and restoration activities. The Biological Monitor(s) will have experience conducting FTHL field monitoring, have sufficient education and field experience to understand FTHL biology, be able to identify FTHL scat, and be able to identify and follow FTHL tracks. The Designated Biologist will submit a resume, at least three references, and contact information of the proposed Biological Monitor(s) to the BLM for approval. To avoid and minimize impacts to biological resources, the Biological Monitors will assist the Designated Biologist with the following:</p> <ul style="list-style-type: none"> <li>• Be present during construction (e.g., grubbing, grading, structure installation) activities that take place in FTHL habitat to avoid or minimize take of FTHL. Activities include, but are not limited to, ensuring compliance with all impact-avoidance and -minimization measures, monitoring for FTHLs and removing lizards from harm's way, and checking avoidance areas (e.g., washes) to ensure that signs and stakes are intact and that human activities are restricted in these avoidance zones.</li> <li>• At the end of each work day, inspect all potential wildlife pitfalls (trenches, bores, and other excavations) for wildlife. If the potential pitfalls will not be immediately backfilled by the construction crew following inspection, the construction crew shall insure that all trenches, bores, and other excavations will be contoured at a 3:1-slope at the ends to provide wildlife escape ramps, or be completely and securely covered to prevent wildlife access. If a FTHL is found trapped in an excavation, the affected lizard shall be captured by hand and relocated.</li> <li>• During construction, examine areas of active surface disturbance periodically, at least hourly, when surface temperatures exceed 29°Celsius (C; 85°F) for the presence of FTHL.</li> </ul>	Biological Resources (FTHL)

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction (federal land only)	<p>A Biological Monitor shall develop and implement the portion of the WEEP outlined above applicable to FTHL. Wallet-cards summarizing this information shall be provided to all construction and maintenance personnel. The FTHL portion of the WEEP shall include the following aspects at a minimum:</p> <ul style="list-style-type: none"> <li>• Biology and status of the FTHL,</li> <li>• Protection measures designed to reduce potential impacts to the species,</li> <li>• Function of flagging designating authorized work areas,</li> <li>• Reporting procedures to be used if a FTHL is encountered in the field, and</li> <li>• Importance of exercising care when commuting to and from the project area to reduce mortality of FTHLs on roads.</li> </ul>	Biological Resources (FTHL)
Construction (federal land only)	<p>FTHLs will be removed from harm's way during all construction activities. FTHL removal will be conducted by Biological Monitors when construction activities are being conducted in suitable FTHL habitat. To the extent feasible, methods to find FTHLs will be designed to achieve a maximal capture rate and will include, but not be limited to, using strip transects, tracking, and raking around shrubs. During construction, the minimum survey effort will be 30 minutes per 0.40 hectare (30 minutes per 1 acre). Persons that handle FTHLs will first obtain all necessary permits and authorization from the CDFG. FTHL removal surveys will also include:</p> <ul style="list-style-type: none"> <li>• Accurate records maintained by Biological Monitors for each relocated FTHL, including sex, snout-vent length, weight, air temperature, location, date, and time of capture and release, a close-up photo of the lizard, and a photo of the habitat where the lizard was first encountered.</li> <li>• To the extent feasible, a sample of the lizard scat will be collected.</li> <li>• A Horned Lizard Observation Data Sheet and a project Reporting Form will be completed. During construction, annual reports describing FTHL removal activity will be submitted to the BLM and CDFG.</li> </ul>	Biological Resources (FTHL)

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6  
DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Construction (federal land only)	The removal of FTHLs out of harm's way will include relocation to nearby suitable habitat in low-impact (e.g., away from roads and construction sites) areas of the Yuha MA. Relocated FTHLs will be placed in the shade of a large shrub in undisturbed habitat. If surface temperatures in the sun are less than 24°C (75°F) or exceed 38°C (100°F), the Designated Biologist or Biological Monitor, if authorized, will hold the FTHL for later release. Initially, captured FTHLs will be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. FTHLs will be held at temperatures between 75°F and 90°F and will not be exposed to direct sunlight. Release will occur as soon as possible after capture and during daylight hours. The Designated Biologist or Biological Monitor will be allowed judgment and discretion when relocating lizards to maximize survival of FTHLs found in the project area.	Biological Resources (FTHL)
Construction (federal land only)	To the maximum extent practicable, grading in FTHL habitat will be conducted during the active season, which is defined as March 1 through September 30, or when ground temperatures are between 24°C (75°F) and 38°C (100°F). If grading cannot be conducted during this time, any FTHLs found will be removed to low-impact areas (see above) where suitable burrowing habitat exists (e.g., sandy substrates and shrub cover).	Biological Resources (FTHL)
Pre-Construction (federal land only)	The Applicant shall develop a project-specific Habitat Restoration Plan (HRP) for approval by the lead agency. The HRP shall consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the project area, noxious weed control, and additional erosion control. The Applicant shall conduct periodic inspections of the restored area. Restoration shall include eliminating any hazards to FTHLs created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing native perennial shrubs during restoration shall be minimized, even if such shrubs have been crushed by construction activities.	Biological Resources (Soils, Vegetation, FTHL)



## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-6**  
**DESIGN FEATURES AND BEST MANAGEMENT PRACTICES FOR THE GEN-TIE LINE ON FEDERAL [BLM] LAND**

Applies During	Proposed Design Features/Best Management Practice	Impact/Environmental Issue Addressed
Operation & Maintenance (federal land only)	<p>During routine O&amp;M activities, the Applicant will implement measures to reduce FTHL mortality along access and maintenance roads, particularly during the FTHL active season (March 1 through September 30). These measures will include:</p> <ul style="list-style-type: none"> <li>• A speed limit of 15 miles per hour when driving Gen-tie Line access roads. All vehicles required for O&amp;M along the Gen-tie Line must remain on the designated access/maintenance roads.</li> <li>• Pedestrian access outside of the designated access roads is permitted year- round as long as no ground-disturbing activities take place (such as weed abatement or other activities that would require soil disturbance beyond pedestrian footprints). This pedestrian access includes occasional inspections of Gen-tie Line equipment.</li> <li>• O&amp;M activities including weed abatement or any other O&amp;M activity that may result in ground disturbance outside of the designated access roads will be conducted outside of the FTHL active season whenever feasible.</li> <li>• If any O&amp;M activities must be conducted during the FTHL active season that may result in ground disturbance, such as weed abatement or vehicles requiring access outside of a designated access road, a Biological Monitor will be present during activities to minimize the potential for effects on FTHL.</li> <li>• Implementation of these measures would be based on FTHL activity levels, the best professional judgment of the Designated Biologist and site-specific road utilization. FTHLs found on access/maintenance roads, if/when monitoring is required, will be relocated in accordance with the measures above.</li> </ul>	Biological Resources (FTHL)
Pre-const., Operation & Maintenance (federal land only)	A Raven Control Plan will be prepared and approved by the BLM prior to ground-disturbing activities, and implemented during O&M of the Gen-tie Line. This plan will be designed to discourage scavengers that may also prey on wildlife in the vicinity.	Biological Resources (FTHL)
Pre-Construction, Operation & Maintenance (federal land only)	During O&M, a Weed Management Plan will be prepared and approved by the BLM prior to ground-disturbing activities, and implemented during O&M of the Gen-tie Line. This plan describes specific on-going measures to remove weedy plant species from the ROW and encourage native plant growth. This plan should be prepared in conformance with herbicide and native seed/planting guidelines outlined in the project's Habitat Restoration Plan and should be approved by the BLM.	Noxious Weeds

### 2.2 ACTION ALTERNATIVES INCLUDING THE PROPOSED ACTION

This EIR/EA evaluates the Proposed Action and three action alternatives: Alternative 1 - Double Circuit Gen-tie Line Structures, Alternative 2 - Reduced CSE Facility Site, and Alternative 3 - Use Existing Electric Line Towers and 230-kV Line Looping (**Figure 2.0-37**).

#### 2.2.1 PROPOSED ACTION

The Proposed Action consists of two primary components in unincorporated western Imperial County southeast of the Imperial Valley Substation: 1) the CSE Facility; and 2) the Gen-tie Line. The key components of the Proposed Action include PV arrays (PV modules, mounting structures, DC electrical wiring, power conditioning equipment including inverters and transformers, and the AC collector system that transmits electricity from the PV Arrays to the CSE Facility substation); the CSE Facility substation; the common services area; and ancillary systems such as fencing, security, lighting, fire protection, access roads, and other systems. Further details of the Proposed Action are described in subsections 2.1.5.2 and 2.1.5.3.

#### 2.2.2 ALTERNATIVE 1 – DOUBLE CIRCUIT GEN-TIE LINE STRUCTURES

Several solar power projects have been proposed in the vicinity of the CSE Facility and, like the Applicant, each has proposed locating its gen-tie line adjacent to the corridor of existing transmission lines extending from south of SR 98, northward into Imperial Valley Substation. Since each of the other projects is proposing to interconnect with the Imperial Valley Substation using a single-circuit gen-tie line, the impacts from multiple gen-tie lines can be reduced if two projects share a single set of structures (Disturbance acreages associated with this alternative are presented in **Table 2.0-3**).

Under Alternative 1, the Applicant would construct its Gen-tie Line in the same alignment identified for the Proposed Action but install tower structures capable of supporting an additional 230-kV circuit. The gen-tie line from the next project built subsequent to the Applicant's could be strung on the open side of the towers built by the Applicant preventing, in part, impacts associated with the construction of a separate set of gen-tie structures. The Applicant would construct double-circuit structures for the segment of the Gen-tie Line that is not parallel to the existing 230-kV structures leading into Imperial Valley Substation (i.e., for the east-west segment of the Gen-tie Line south of SR 98) as part of this alternative (**Figure 2.0-37**).

#### 2.2.3 ALTERNATIVE 2 – REDUCED CSE FACILITY SITE

This alternative would occupy all the same private land parcels currently encompassed in the CSE Facility site with the exception of the three parcels subject to contracts entered into pursuant to the California Conservation Act of 1965 (CLCA or Williamson Act). Specifically no project improvements would be placed on the Williamson Act parcels under this alternative, other than overhead and underground electric lines associated with the AC collector system (as described in subsection 2.1.5.2, item C) and communication lines. These electric lines would be required across portions of these parcels to electrically connect the solar facilities north of the three parcels subject to Williamson Act to the CSE Facility substation.

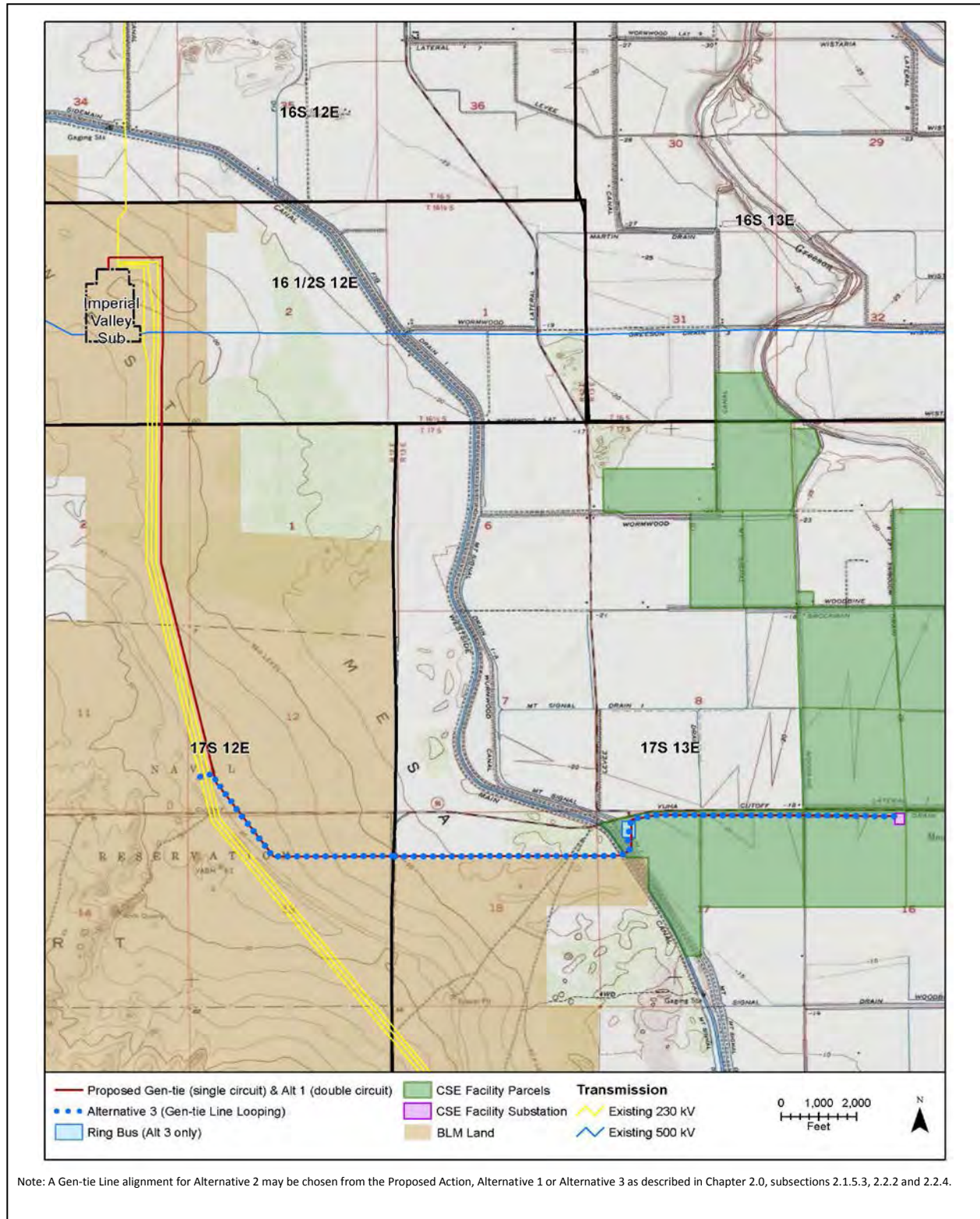
Removal of these three parcels would result in disturbance of approximately 335 fewer acres and allow continued agricultural uses and not result in early cancellation of the Williamson Act Contracts. The amount of power produced by Alternative 2 would be reduced approximately 45-MW to 230-MW (**Figure 2.0-38**). Disturbance acreages associated with this alternative are presented in **Table 2.0-3**.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

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## 2.0 PROPOSED ACTION AND ALTERNATIVES



Source: CSE, 2011e.

FIGURE 2.0-37  
PROPOSED AND ALTERNATIVE GEN-TIE LINE ALIGNMENTS

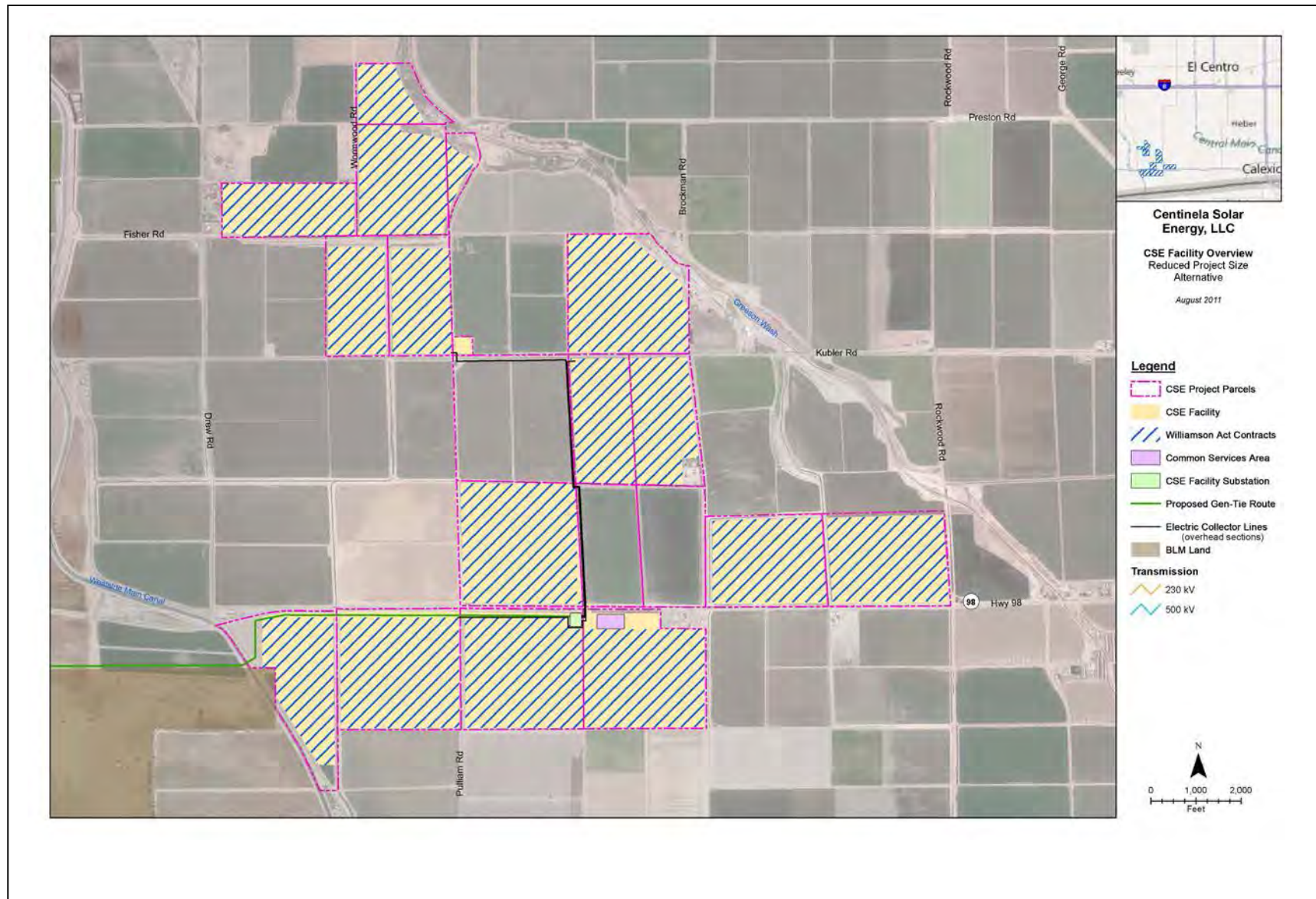
## 2.0 PROPOSED ACTION AND ALTERNATIVES

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## 2.0 PROPOSED ACTION AND ALTERNATIVES



Source: CSE, 2011.

FIGURE 2.0-38  
 ALTERNATIVE 2 – REDUCED CSE FACILITY

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## 2.0 PROPOSED ACTION AND ALTERNATIVES

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In 2010, Imperial County took action to issue notices of nonrenewal for all existing Williamson Act contracts in the county, including the three parcels discussed above. As such the Williamson Act contracts will terminate on December 31, 2018 (whether or not the project as proposed or as considered under Alternative 2 is approved).

A Gen-tie Line alignment for Alternative 2 may be selected from the Proposed Action (described in subsection 2.1.5.3), Alternative 1 (described in subsection 2.2.2) or Alternative 3 (described in subsection 2.2.4). Any Gen-tie Line alignment selected would include a portion extending through BLM land.

### 2.2.4 ALTERNATIVE 3 - USE EXISTING ELECTRIC LINE TOWERS AND 230-kV LINE LOOPING AND UNDERCROSSING

Alternative 3 includes construction of a “loop-in” to connect the CSE Facility via the Gen-tie Line to the radial SDG&E line (**Figure 2.0-37** and **Figure 2.0-39**). Under this alternative, the CSE Facility would interconnect to the utility grid at the 230-kV bus at the Imperial Valley Substation using an electric line located on the existing SDG&E towers. The following work would be completed by SDG&E under its existing right-of-way and permits:

- Replace the five single-circuit towers within the existing ROW with double circuit towers (first five towers outside of the Imperial Valley Substation).
- String new 230-kV electric line on the eastern arms of the double-circuit towers. For utility planning purposes, CSE understands that SDG&E prefers that this new electric line become the La Rosita – Imperial Valley line, and as such the new line will extend southward to a point north of, and located within approximately 1.5 miles of the International Border. At this location (the “Cross Point”) the new electric line will cross to the western arms and join the old electric line extending into Mexico.
- North of the Cross Point, the old 230-kV electric line would become a radial line extending from the Cross Point to the Imperial Valley Substation. (Note: Imperial Solar Energy Center South project CUP 10-0011 is authorized to interconnect with this line near the Cross Point.)

To interconnect (loop-in) CSE’s Gen-tie Line with the radial SDG&E electric line, a 230-kV switchyard using a four-breaker ring bus (“Ring Bus”) would be constructed by CSE on private land at the CSE Facility site immediately east of the Westside Main Canal and south of SR 98, along the proposed Gen-tie Line route. A double-circuit 230-kV electric line (to be strung on single or double-circuit towers) would connect the CSE Facility substation to the Ring Bus. Two 230-kV lines, on a set of double-circuit towers, would be constructed westward from the Ring Bus along the proposed Gen-tie Line Route to the SDG&E towers, where the CSE lines would connect to the radial SDG&E line adjacent to the first set of existing towers north of SR 98. The two 230-kV lines would require undercrossing structures to pass beneath the existing north-south 230-kV lines. The radial SDG&E line would be cut and each end spliced together with one of the new CSE 230-kV lines to complete the loop.



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## 2.0 PROPOSED ACTION AND ALTERNATIVES



No Scale

Legend			
Gen-tie Line Structures	<b>Construction Areas</b>	<b>Access Roads</b>	<b>Transmission</b>
Gen-tie Centerline	Tower Construction Pad	Use Existing	Existing 230-kV line
Permanent ROW (125')	Pulling & Tensioning Site	New Bladed Road	X Existing Structures
	Temp. Guard Structure	Temporary Bladed Road	

FIGURE 2.0-39  
ALTERNATIVE 3 - GEN-TIE LINE TOWERS

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## 2.0 PROPOSED ACTION AND ALTERNATIVES

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The Gen-tie Line under this alternative would include the following components:

- Ring Bus on private land – an approximately 450-foot by 350-foot electric switchyard using a four-breaker ring bus to be located on the CSE Facility Site. The Ring Bus would have its own chain link fence with three strands of barbed wire. For access, the proposed access road off of SR 98 on private land would be extended outside of the CSE Facility fence line to the Ring Bus. The four-breaker ring bus could accommodate an additional 230-kV electric line, though this is not required for the project. The Ring Bus will include high-voltage circuit breakers, meters, disconnect switches, lightning arresters, overhead shield wires, lightning masts, electrical control house, communications systems and other equipment required for the operation and maintenance of the Ring Bus.
- Two, approximately 2.5 mile-long 230-kV electric lines on new double-circuit towers generally extending west from the Ring Bus to the radial SDG&E line (approximately 1.2 miles of this segment would be on federal land). These lines would follow CSE's proposed Gen-tie Line route extending west to the existing 230-kV towers, then north across SR 98 to the tie-in point where the Gen-tie Line would undercross the existing 230-kV lines. The Gen-tie Line undercrossing would include up to five H-frame undercrossing structures and three 3-pole tubular structures. At the undercrossing, the fiber optic lines would be strung on the tower structures below the phase conductors or would be placed underground within the ROW.
- An approximately 1.4-mile-long 230-kV electric line within the CSE Facility site on private land on new single or double circuit towers.

This alternative would result in the elimination of approximately 3 miles of new tower structures on BLM-managed native desert lands north of SR 98. Disturbance acreages associated with this alternative are presented in **Table 2.0-3**. CSE would intend to construct the double circuit electric lines and towers on the federal land; however, in the future these facilities and the associated BLM ROW grant may be transferred to SDG&E for operation and maintenance.

### 2.3 NO ACTION ALTERNATIVE

One No Action Alternative is examined in this EIR/EA. This alternative is the equivalent of the No Project Alternative under CEQA (CEQA Guidelines Section 15126.6(e)).

#### 2.3.1 ALTERNATIVE 4 – NO ACTION/NO PROJECT ALTERNATIVE

This alternative assumes that the CSE Facility and Gen-tie Line would not be constructed. The Alternative 4 - No Action/No Project Alternative would not require a federal approval as no BLM land would be crossed. Under CEQA, continuation of agricultural uses on the CSE Facility portion of the project would be expected based on the current General Plan and Land Use Ordinance designations.

### 2.4 COMPARISON OF IMPACTS BY ALTERNATIVE

**Table 2.0-7** presents a comparison of the differences in impacts among the alternatives described in subsections 2.2 and 2.3 above. The information in **Table 2.0-7** is derived from the analysis of environmental consequences presented in Chapter 4.0.

### 2.5 CEQA ENVIRONMENTALLY SUPERIOR ALTERNATIVE

In accordance with CEQA requirements, an “environmentally superior alternative” must be identified among the alternatives analyzed in an EIR. The environmentally superior alternative is the alternative found to have an overall environmental advantage compared to the other alternatives based on the impact analysis in the EIR. If the environmentally superior alternative is the No Project alternative, CEQA Guidelines Section 15126.6(e)(2) requires the EIR to identify an environmentally superior alternative from among the other alternatives. In the case of the proposed project, the No Action/No Project Alternative would be superior to any of the action alternatives because the impacts of implementing the Centinela Solar Energy Project would be avoided. Among the other alternatives, Imperial County has identified Alternative 2 – Reduced CSE Facility Site as the environmentally superior alternative because it would impact 335 fewer acres of agricultural land, including 335 acres of Farmland of Statewide Importance, and avoid the need for conversion of lands currently under Williamson Act Contract. Likewise, the three parcels comprising approximately 335 acres which are under Williamson Act Contract would not require reclassification to a non-agricultural use during the operational life of the project nor would these parcels be ineligible for a Williamson Act Contract during the operational life of the project. Many other impacts (such as visual resources, land use and special designations, transportation and circulation, air quality, geology and soils, cultural resources, noise, hazards and hazardous materials, paleontological resources) would be similar to the proposed project or less due to fewer acres being disturbed during construction (refer to **Table 2.0-7**).

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
<b>Visual Resources</b>	<p>No impact on a scenic vista.</p> <p>Less than significant impacts to degrading scenic quality or character of the site.</p> <p>Less than significant impacts resulting from new sources of light and glare.</p>	Same as would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be converted to a solar facility.	Similar to, or less than, what would occur for the Proposed Action based on 3 miles less of Gen-tie Line.	No impacts to visual resources would occur as the Proposed Action would not be developed.
<b>Land Use and Special Designations</b>	<p>No conflicts with applicable plans (FLPMA, CDCA, YDMP, FTHL Rangewide Strategy, Imperial County General Plan, ALUCP).</p> <p>No conflicts with applicable HCP.</p>	Same as would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be converted to a solar facility.	Similar to, or less than, what would occur for the Proposed Action based on 3 miles less of Gen-tie Line.	No impacts to land use and special designations would occur as the Proposed Action would not be developed.
<b>Transportation and Circulation</b>	<p>No conflict with applicable circulation plan, ordinance or policy.</p> <p>No conflict with an applicable congestion management program.</p> <p>No impact with regard to an increase in traffic relative to an Imperial County Threshold.</p>	Same as would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be developed with solar facilities. Thus, potentially less traffic associated with construction, operations and maintenance, and decommissioning.	Same as would occur for the Proposed Action.	No impacts to transportation and circulation would occur as the Proposed Action would not be developed.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>No impact with regard to exceeding LOS relative to an Imperial County Threshold.</p> <p>No impact with regard to hazards due to a design feature.</p> <p>No impact to emergency access</p> <p>No impact to parking capacity.</p>				
<b>Air Quality</b>	<p>Significant impacts would occur with regard to a conflict with an applicable air quality plan as the Proposed Action would generate NO<sub>x</sub> and PM<sub>10</sub> during construction. Following implementation of mitigation measures AQ-1, AQ-2, AQ-3 and AQ-4, impacts would be reduced to less than significant under CEQA.</p> <p>The Proposed Action would violate an air quality standard/cause air quality violation during construction as emissions of NO<sub>x</sub> and</p>	<p>Similar to what would occur for the Proposed Action.</p>	<p>Similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be disturbed during construction.</p>	<p>Similar to what would occur for the Proposed Action.</p>	<p>No impacts to air quality would occur as the Proposed Action would not be developed.</p>

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>PM<sub>10</sub> would exceed the ICAPCD significance thresholds. Following mitigation, this impact would be reduced to less than significant under CEQA.</p> <p>The Proposed Action would result in less than significant impacts with regard to exposure of sensitive receptors to substantial pollutant concentrations (Diesel-Related Toxic Emissions) under CEQA.</p>				
<b>Greenhouse Gas Emissions/ Climate Change</b>	<p>The Proposed Action would generate greenhouse gas emissions, but at levels that are considered less than significant under CEQA.</p> <p>The Proposed Action would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. This is considered a less than significant impact under CEQA.</p>	Similar to what would occur for the Proposed Action.	Construction emission impacts similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be developed. A beneficial impact of 45-MW of solar energy (which would offset fossil-fueled electric generation) would be forgone with this Alternative due to the reduced size of the solar field.	Similar to what would occur for the Proposed Action.	No impacts to greenhouse gas emissions/climate change would occur as the Proposed Action would not be developed.



## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
<b>Geology and Soils</b>	<p>Exposure of the site to strong seismic ground shaking is considered a potentially significant impact under CEQA for the Proposed Action that can be mitigated to less than significant with mitigation measure GS-1.</p> <p>The O&amp;M building proposed for the CSE Facility site would be sensitive to differential settlement caused by liquefaction. This is considered a potentially significant impact under CEQA that can be mitigated to less than significant with mitigation measures GS-2 and GS-3.</p> <p>Construction soil erosion impacts are considered potentially significant short-term impacts under CEQA but would be mitigated to less than significant with implementation of a dust control plan (Rule 801); and compliance with the</p>	Same as would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action as 335 fewer acres would be developed with solar facilities.	Slightly less than the Proposed Action based on approximately 3 miles less of Gen-tie Line (11 fewer towers).	No impacts to geology and soils would occur as the Proposed Action would not be developed.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>National Pollutant Discharge Elimination System (NPDES) Construction General Permit.</p> <p>Exposure of proposed structures to expansive soils on the project site is considered a potentially significant impact under CEQA that could be mitigated to less than significant with mitigation measure GS-4.</p> <p>Potential damage to foundations as a result of soil chemistry is considered a potentially significant impact under CEQA that could be mitigated to less than significant with mitigation measure GS-5 and GS-6.</p> <p>Impacts to soil ability to support the use of septic tanks or alternative wastewater disposal systems are considered less than significant under CEQA.</p>				

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
<b>Cultural Resources</b>	<p>Substantial adverse changes to a historical resource are considered potentially significant under CEQA but can be mitigated to less than significant with mitigation measures CR-1, CR-2, CR-3, CR-5, and CR-6.</p> <p>Substantial adverse changes to an archaeological resource are considered potentially significant under CEQA but can be mitigated to less than significant with mitigation measures CR-1, CR-2, CR-3, CR-5, and CR-6.</p> <p>Disturbance to previously unknown human remains is considered a potentially impact that would be reduced to less than significant under CEQA with mitigation measures CR-4 and CR-5.</p>	Same as would occur for the Proposed Action: 43 cultural resource sites, one eligible, 4 recommended eligible.	Same as would occur for the Proposed Action: 43 cultural resource sites, one eligible, 4 recommended eligible.	Less than would occur for the Proposed Action: 32 cultural resource sites, one eligible, 4 recommended eligible.	No impacts to cultural resources would occur as the Proposed Action would not be developed.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
<b>Noise</b>	Less than significant impacts would occur with regard to noise levels in excess of standards and temporary and permanent increases in noise during construction, operations and maintenance and decommissioning.	Similar to what would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action because construction, operational and decommissioning noise would occur over 335 fewer acres.	Similar to what would occur for the Proposed Action.	No impacts to noise would occur as the Proposed Action would not be developed.
<b>Agricultural Resources</b>	<p>The Proposed Action would result in a potentially significant impact for conversion of Prime Farmland (138 acres), Unique Farmland (two acres), or Farmland of Statewide Importance (1,927 acres) under CEQA but could be reduced to a less than significant level with mitigation measures AR-1 and AR-3.</p> <p>Implementation of the Proposed Action would result in a less than significant impact associated with zoning conflicts under CEQA.</p>	<p>Same as would occur for the Proposed Action.</p> <p>Alternative 1 would directly convert Prime Farmland (138 acres), Farmland of Statewide Importance (1,927 acres), and Unique Farmland (two acres) to a non-agricultural use.</p> <p>Reclassification of the project site to a non-agricultural use during the operational life of the solar facility. Ineligible for a Williamson Act</p>	<p>Similar to (convert 138 acres of Prime Farmland, 1,592 acres of Farmland of Statewide Importance, and two acres of Unique Farmland to a non-agricultural use), or slightly less than (Alternative 2 would result in a reduction of direct impacts to 335 acres of Farmland of Statewide Importance), what would occur for the Proposed Action.</p> <p>No impact to a Williamson Act Contract under CEQA</p> <p>Reclassification of the project site to a non-</p>	<p>Same as would occur for the Proposed Action.</p> <p>Alternative 3 would directly convert Prime Farmland (138 acres), Farmland of Statewide Importance (1,927 acres), and Unique Farmland (two acres) to a non-agricultural use.</p> <p>Reclassification of the project site to a non-agricultural use during the operational life of solar facility. Ineligible for a Williamson Act Contract during operational life.</p>	<p>No impacts to agricultural resources would occur as the Proposed Action would not be developed.</p>

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>Conflicts with Williamson Act parcels are considered a potentially significant impact under CEQA but could be mitigated to less than significant with mitigation measures AR-1 and AR-2.</p> <p>The Proposed Action could result in a potentially significant impact to adjacent agricultural lands associated with potential pest and weed nuisance as a result of conversion of farmland. Implementation of mitigation measure AR-4 would reduce this impact to less than significant under CEQA.</p>	<p>Contract during operational life.</p> <p>Weed and Pest Control Plan as mitigation to address potential pest and weed nuisance as a result of conversion of farmland adjacent to agricultural areas.</p>	<p>agricultural use during the operational life of the solar facility.</p> <p>Weed and Pest Control Plan as mitigation to address potential pest and weed nuisance as a result of conversion of farmland adjacent to agricultural areas.</p>	<p>Weed and Pest Control Plan as mitigation to address potential pest and weed nuisance as a result of conversion of farmland adjacent to agricultural areas.</p>	
<b>Hazards and Hazardous Materials</b>	<p>Impacts associated with exposure to pesticide residue during construction are considered less than significant under CEQA for the Proposed Action.</p> <p>The presence hazardous materials on the project site is considered a potentially</p>	<p>Same as would occur for the Proposed Action.</p>	<p>Same as would occur for the Proposed Action because Alternative 2 includes the affected parcels containing oil stained soil, unauthorized solid waste piles, and 55-gallon drums.</p>	<p>Same as would occur for the Proposed Action.</p>	<p>No impacts to hazards and hazardous materials would occur as the Proposed Action would not be developed</p>

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>significant impact under CEQA that would be mitigated to less than significant with mitigation measures HM-1 and HM-2.</p> <p>No impacts under CEQA are anticipated with regard to the presence of hazardous materials on adjacent properties.</p> <p>Less than significant impacts under CEQA are anticipated in association with transport of hazardous materials during construction of the Proposed Action</p> <p>Potential for accident conditions involving the release of hazardous materials used or stored during construction and operations is considered a less than significant impact under CEQA.</p> <p>Less than significant impacts under CEQA would occur in association with release of</p>				

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	hazardous materials disposal during construction of the Proposed Action.				
<b>Hydrology and Water Quality</b>	<p>Less than significant impacts under CEQA would occur relative to violating water quality standards and degrading water quality during construction and operations and maintenance.</p> <p>Operations and maintenance of the Proposed Action would result in less than significant impacts under CEQA with regard to soil erosion, sedimentation or runoff pollutants.</p> <p>Less than significant impacts under CEQA would occur with regard to alteration of the existing drainage pattern and on- or off-site flooding for the Proposed Action.</p>	Same as would occur for the Proposed Action.	Similar to, or slightly less than, what would occur for the Proposed Action based on 335 fewer acres of disturbance. Unnamed washes may or may not be spanned depending on selection of Gen-tie Line alignment.	Similar to, or less than, what would occur for the Proposed Action based on 3 miles less of Gen-tie Line. Unnamed washes would not be spanned due to shorter Gen-tie Line proposed for Alternative 3.	No impacts to hydrology and water quality would occur as the Proposed Action would not be developed.
<b>Biological Resources</b>	The Proposed Action would result in total disturbance (temporary and permanent)	Same as would occur for the Proposed Action.	Similar to, or less than, what would occur for the Proposed Action based on	Similar to, or slightly less than, what would occur for the Proposed Action	No impacts to biological resources would occur as the Proposed Action

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>of 1,941.89 acres of vegetation including 17.25 acres of temporary disturbance for the Gen-tie Line.</p> <p>Approximately 0.06 acres of jurisdictional waters would be impacted on private lands and 0.01 acres on BLM land.</p> <p>Approximately 6.14 acres of CDFG Jurisdictional areas would be permanently impacted by the CSE Facility and 0.09 acres would be impacted permanently by the Gen-tie Line.</p> <p>Approximately 0.04 acres would be temporarily impacted by the Gen-tie Line.</p> <p>The Proposed Action could adversely affect special federal and/or state listed species, as well as BLM sensitive wildlife species. With the implementation of Mitigation Measures BIO-1 through BIO-8 the impact to special status species is</p>		<p>335 fewer acres of disturbance.</p> <p>Alternative 2 would result in total disturbance (temporary and permanent) of 1,606.88 acres of vegetation including 17.25 acres of temporary disturbance for the Gen-tie Line.</p> <p>Approximately 0.06 acres of jurisdictional waters would be impacted on private lands and 0.01 acres on BLM land.</p> <p>Approximately 6.14 acres of CDFG Jurisdictional areas would be permanently impacted by the CSE Facility and 0.09 acres would be impacted permanently by the Gen-tie Line. Approximately 0.04 acres would be temporarily impacted by the Gen-tie Line.</p>	<p>based on 3 miles less of Gen-tie Line.</p> <p>Alternative 3 would result in total disturbance (temporary and permanent) of 1,937.56 acres of vegetation including 10.14 acres of temporary disturbance for the Gen-tie Line.</p> <p>Approximately 0.06 acres of jurisdictional waters would be impacted on private lands and 0.01 acres on BLM land.</p> <p>Approximately 6.14 acres of CDFG Jurisdictional areas would be permanently impacted by the CSE Facility and 0.03 acres would be impacted permanently by the Gen-tie Line. Approximately 0.09 acres would be temporarily impacted by the Gen-tie Line.</p>	<p>would not be developed.</p>



## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>considered a less than significant impact under CEQA.</p> <p>The Proposed Action potentially affects three sensitive natural communities, but impacts would be reduced to less than significant under CEQA with implementation of Mitigation Measures BIO-1 through BIO-8.</p> <p>The Proposed Action would impact jurisdictional waters on private lands and jurisdictional habitat on BLM managed lands. The combination of avoidance, minimization and compensation will render the proposed impacts less than significant. With implementation of Mitigation Measures BIO-3, BIO-5 and BIO-8 the impact to protected wetlands/waters is considered less than significant under CEQA.</p>				

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	<p>With the implementation of Mitigation Measures BIO-1 through BIO-8 the impact to wildlife movement is considered a less than significant impact pursuant to CEQA.</p> <p>Implementation of the Proposed Action does not conflict the any local policies or ordinances protecting biological resources. Mitigation Measures BIO-1 through BIO-8 will ensure consistency and ensure that the Proposed Action has a less than significant impact pursuant to CEQA.</p> <p>The Proposed Action is an allowable use under the CDCA. All proposed impacts to resources discussed in this section are in conformance with the CDCA and maintain the integrity and intent of the Conservation Plan. Mitigation Measures BIO-1</p>				

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	through BIO-8 will ensure consistency and ensure that the Proposed Action has a less than significant impact pursuant to CEQA.				
<b>Paleontological Resources</b>	Excavation activities associated with construction of the Gen-tie Line on previously disturbed BLM land and deep excavations on private lands could result in a direct impact to paleontologically sensitive geologic rock units. This is considered a potentially significant under CEQA for the Proposed Action. Mitigation Measures PR-1 through PR-5 provide recommendations to reduce impacts to paleontological resources to less than significant levels.	Same as would occur for the Proposed Action.	Same as, or potentially less than, what would occur for the Proposed Action based on 335 fewer acres of disturbance.	Same as, or potentially less than, what would occur for the Proposed Action based on 3 less miles of Gen-tie Line requiring construction on BLM land.	No impacts to paleontological resources would occur as the Proposed Action would not be developed.
<b>Environmental Justice</b> (Note: This was evaluated strictly with regard to NEPA)	No minority or low-income populations would be disproportionately affected by any high and adverse human health, environmental, or	Same as would occur for the Proposed Action.	Same as would occur for the Proposed Action.	Same as would occur for the Proposed Action.	No impacts to environmental justice would occur as the Proposed Action would not be developed.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

**TABLE 2.0-7  
COMPARISON OF ALTERNATIVES**

Resource	Proposed Action Single Circuit	Alternative 1: Double Circuit Gen-tie Line Structures	Alternative 2: Reduced CSE Facility Site	Alternative 3: Use Existing Electric Line Towers and 230-kV Line Looping	Alternative 4: No Action/No Project
	socioeconomic effects during construction, operations and maintenance or decommissioning of the Proposed Action.				
<b>Recreation</b> (Note: This was evaluated strictly with regard to NEPA)	Construction of the Gen-tie Line for the Proposed Action in Utility Corridor N may temporarily disrupt, but would not entirely preclude use of the roads for access to recreational uses on BLM lands. Likewise, the new bladed access roads needed for construction of the Gen-tie Line within Utility Corridor N would not be used to access recreational areas on BLM lands. These roads would be limited to use in association with construction of the proposed Gen-tie Line.	Same as would occur for the Proposed Action.	Same as would occur for the Proposed Action.	Same as would occur for the Proposed Action.	No impacts to recreation would occur as the Proposed Action would not be developed.

### 2.6 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

#### 2.6.1 SINGLE CIRCUIT GEN-TIE LINE SHIFTED EASTWARD

If the Gen-tie Line alignment identified as part of the Proposed Action should not be viable, or if potentially significant impacts under NEPA could be avoided, the Gen-tie Line alignment could shift to the east to avoid conflicts and/or to minimize environmental impacts. This proposed alignment would be approximately 125 to 400 feet east of the Proposed Action. This alternative alignment for the Gen-tie Line would use single-circuit structures as described in Alternative 1. However, this alternative does not appear to offer greater environmental benefits (such as less land disturbance or fewer construction emissions) compared to the Proposed Action or Alternatives 1, 2 and 3. Therefore, it was eliminated from detailed analysis.

#### 2.6.2 DOUBLE CIRCUIT GEN-TIE LINE SHIFTED EASTWARD

If the Gen-tie Line alignment identified as part of the Proposed Action is not viable, or if potentially significant impacts under NEPA could be avoided, the Gen-tie Line alignment could be shifted to the east to avoid any conflicts and/or to minimize environmental impacts. This proposed alignment would be approximately 125 to 400 feet east of the Proposed Action and would use double-circuit structures as described in Alternative 1. However, this alternative does not appear to offer greater environmental benefits (such as less land disturbance or fewer construction emissions) compared to the Proposed Action or Alternatives 1, 2 and 3. In fact, it could potentially cause greater biological and cultural resource impacts associated with disturbance of an area 125 to 400 feet east of the Proposed Action within Utility Corridor N. Therefore, it was eliminated from detailed analysis.

#### 2.6.3 GEN-TIE LINE UNDERCROSSING

The Applicant's engineers have indicated that if more than one additional 230-kV electric line is routed north-south under the 500-kV line commonly known as the Southwest Power Link (SWPL) adjacent to the Imperial Valley Substation, there is a possibility that the additional crossing(s) might need to be moved east of the midpoint of the span between the two SWPL structures. This shift of additional crossings would be needed to obtain sufficient vertical clearance for the undercrossing. However, this alternative is eliminated from further consideration because the Imperial Solar Energy Center South project CUP 10-0011 is authorized to co-locate on double-circuit towers included as part of the Proposed Action.

#### 2.6.4 USE EXISTING ELECTRIC TOWERS AND 230-kV LINE LOOPING SOUTH OF SR 98

This alternative is nearly identical in scope to Alternative 3 - Use Existing Electric Line Towers and 230-kV Line Looping and Undercrossing. The only notable difference is that the proposed tie-in point for the line looping facilities would have been located immediately south of SR 98 rather than to the north of SR 98. The potential benefit of this alternative was a slightly shorter new electric line on BLM land as compared to Alternative 3. However, this alternative was eliminated because impacts to certain environmentally sensitive resources could not be avoided. In contrast impacts to environmentally sensitive resources could be avoided under all the other action alternatives (Proposed Action and Alternatives 1, 2, and 3) and Alternative 3 provides benefits similar to this alternative.

## 2.0 PROPOSED ACTION AND ALTERNATIVES

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### **2.6.5 REDUCED ENCROACHMENT ON FEDERAL LAND WHILE STILL INTERCONNECTING AT IMPERIAL VALLEY SUBSTATION**

When the initial SF299 application was submitted, the Applicant was considering routing the Gen-tie Line across additional private property en route to the Imperial Valley Substation such that only about three miles of the Gen-tie Line would have been on federal land (with an additional approximately four miles of the Gen-tie Line on private land). The Applicant pursued this alternative with the expectation that the route was environmentally and technically feasible even though this route would create a major new overhead utility corridor across private lands. As such, the Applicant entered into discussions and advanced negotiations with several private property owners in the area. However, despite spending over one year pursuing this alternative, the Applicant was unable to enter into rights-of-way agreements on reasonable commercial terms with any of the private property owners to use this Gen-tie Line route. The Applicant also considered private rights-of-way farther north but found that one or more landowners have entered into agreements with other developers which prevent them from granting rights-of-way for the foreseeable future. Since the Applicant is an independent power producer and lacks condemnation authority, the Applicant must reach mutual agreements with private landowners to route the Gen-tie Line across private property.

This alternative was eliminated from detailed analysis due economic and feasibility considerations (Applicant unable to secure rights-of-way, even at above-market-value purchase prices).

### **2.6.6 INTERCONNECTION TO THE 500-kV LINE VIA A NEW SUBSTATION ON PRIVATE LANDS**

This alternative would involve an interconnection to the 500-kV line commonly known as the Southwest Power Link (SWPL) via a new substation constructed by the Applicant on private lands. Utility and transmission operators prefer to limit and consolidate the number of interconnections on 500-kV lines. Therefore, building a new 500-kV substation within 3 miles of the existing Imperial Valley Substation, while technically feasible, would impose operational and management challenges and would be atypical when the existing substation was designed for additional electric lines. Further, implementation of this alternative would require a new substation footprint, increase the amount of materials (concrete, gravel, electrical equipment), and increase the amount of construction traffic. Additionally, the Applicant believes this alternative would not be cost effective. Lastly, the additional time it would take to have the utility permit, design, and construct a new 500-kV substation would jeopardize the Applicant's schedule. Thus, this alternative was eliminated from detailed analysis due to technical, environmental, economic and schedule considerations.

### **2.6.7 INTERCONNECTION TO THE 230-kV LINES SOUTH OF IMPERIAL VALLEY SUBSTATION VIA A NEW SUBSTATION ON FEDERAL LANDS**

Connecting to one or more of the existing 230-kV lines south of Imperial Valley Substation by constructing a new substation on federal land was also considered. This alternative would shorten the length of the Gen-tie Line but would create an additional 2.3-acre electric switchyard on federal lands. This would increase impacts to native desert land, including flat-tailed horned lizard habitat. Likewise, this alternative does not appear to offer environmental benefits. Therefore, this Alternative was eliminated from detailed analysis.

### 2.6.8 INTERCONNECTION TO IMPERIAL VALLEY SUBSTATION AT ALTERNATIVE VOLTAGES (E.G., 500-KV OR <230-KV)

The project is designed to operate at 230-kV because this is the lowest voltage existing at Imperial Valley Substation and an appropriate voltage to interconnect the CSE Facility. Designing the project to operate at 500-kV would add additional expense and would likely increase the size of individual tower structures. Interconnecting at a voltage lower than 230-kV (e.g. 115-kV) would require SDG&E and CAISO to add new transformers and infrastructure inside Imperial Valley substation and incur additional operations and maintenance requirements at this facility. There are no apparent benefits (environmental or cost) that would make designing the project at a higher or lower voltage superior to the 230-kV design. Further, changing the interconnection voltage would require the Applicant to modify its interconnection request which, at a minimum, would result in a two-year delay to the project and the feasibility of such is uncertain given other activities ongoing to fully utilize the Imperial Valley Substation. Based on these uncertainties, this alternative was eliminated from detailed analysis.

## 2.7 INTENDED USES OF THE EIR/EA/AUTHORIZING ACTIONS

Due to the project's encroachment into federal lands, two agencies have jurisdiction. The County of Imperial is the Lead Agency with regard to the CSE Facility as well as portions of the Gen-tie Line not located on BLM land. The County will serve as the Lead Agency regarding the California Environmental Quality Act (CEQA) and the Applicant's request for a Conditional Use Permit (CUP). The BLM will serve as the cooperating agency to fulfill the requirements of the National Environmental Policy Act (NEPA).

### 2.7.1 DISCRETIONARY ACTIONS AND APPROVALS

#### 2.7.1.1 COUNTY OF IMPERIAL

In conformance with Sections 15050 and 15367 of the State CEQA Guidelines, the County of Imperial has been designated the "lead agency," defined as, "the public agency which has the principal responsibility for carrying out or approving a project." The following identifies the discretionary actions and approvals by the Imperial County Planning Commission and/or Board of Supervisors for the proposed project.

#### A. Certification of the Final EIR

After the required public review for the Draft EIR, Imperial County shall respond to written comments, edit the document, and produce a Final EIR to be considered for certification by the Planning Commission and/or Board of Supervisors prior to making a decision on the project.

#### B. Mitigation Monitoring and Reporting Program

A Mitigation Monitoring and Reporting Program shall be adopted as required by CEQA Guidelines Section 15097.

#### C. Conditional Use Permit (CUP10-0017)

The proposed project will require approval of a Conditional Use Permit by Imperial County to allow construction and operation of the proposed project at the proposed site.

#### D. Site Plan

Site Plan and Architectural Review is required for all non-residential projects.

### E. Variance (V10-0006)

A variance is required for project site in order to exceed the height limit for electric line towers on private lands subject to Imperial County zoning regulation. The existing zoning allows for a maximum height limit of 120 feet; whereas, transmission towers of up to 130 feet in height are proposed on private lands. This variance applies only to the towers that will be located within the private lands under the jurisdiction of the Imperial County.

### F. Williamson Act Contract

The Applicant has filed an Application for Disestablishment or Diminishment of an Agricultural Preserve and a Petition for Cancellation of Contract on Assessor's Parcel Numbers 052-170-035, 052-170-076 and 052-170-078. The application package was submitted to Imperial County on September 30, 2011.

### G. Water Supply Assessment

A Draft Water Supply Assessment (WSA) has been prepared for the project in compliance with Water Code Section 10910(b). The WSA must be reviewed by the Imperial Irrigation District and approved by the Board of Supervisors. The Draft WSA is included in Appendix A of this EIR/EA.

#### 2.7.1.2 BUREAU OF LAND MANAGEMENT

##### **BLM Grant of Right-of-Way (BLM Right-of-Way Application Serial No. CACA 52092)**

The portion of the Gen-tie Line on federal land will require Right-of-Way (ROW) approval by the Bureau of Land Management (BLM) to allow construction and operation of the proposed electric line, any required improvements to existing unpaved access roads, and, if necessary, construction of new unpaved access roads within lands managed by the BLM.

#### **2.7.2 SUBSEQUENT/CONCURRENT ENTITLEMENTS TO IMPLEMENT THE PROPOSED PROJECT**

A variety of entitlement actions and discretionary permits will be required from Imperial County to implement the components of the proposed project:

- Demolition Permit for removal of existing structures
- Grading Plan for the project site and roadways
- Construction Traffic Control Plan
- Development Agreement
- Building Permits
- Encroachment Permits from the Imperial County Public Works Department for access to the lot(s) and for any proposed road crossings
- Occupancy Permit

#### **2.7.3 DISCRETIONARY ACTIONS AND APPROVALS BY OTHER AGENCIES**

Responsible Agencies are those agencies that have discretionary approval over one or more actions involved with development of the proposed project site. Trustee Agencies are state agencies that have discretionary approval or jurisdiction by law over natural resources affected by a project. These agencies may include, but are not limited to the following:



## 2.0 PROPOSED ACTION AND ALTERNATIVES

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- U.S. Army Corps of Engineers - Clean Water Act Section 404 Nationwide Permit
- U.S. Fish and Wildlife Service - Endangered Species Act Section 7 compliance
- U.S. Department of Defense and/or Federal Aviation Administration – Determine hazards to air navigation
- California Department of Fish and Game (CDFG) (Trustee Agency) - State Endangered Species Act compliance, Streambed Alteration Agreement (Section 1603 of the California Fish and Game Code), California Native Plant Protection Act (mitigation for rare plants)
- California Department of Transportation (Caltrans) – Encroachment permit
- California Regional Water Quality Control Board (RWQCB), Colorado River Basin, Region 7 – Section 401 Water Quality Certification, General Construction Activity Storm Water Permit
- California State Historic Preservation Office – Compliance with Section 106 of the National Historic Preservation Act
- Imperial Irrigation District - Encroachment permit
- Imperial County Air Pollution Control District- Rule 801 compliance
- Imperial County Fire Department - approval of final design of the proposed fire system